NAVAL POSTGRADUATE SCHOOL

MONTEREY, CALIFORNIA

THESIS

LEARNING TO SEE THE OPPORTUNITIES IN CRISIS AND CATASTROPHE: A DECISION MAKER'S GUIDE TO THE ISSUE-ATTENTION CYCLE

by

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September 2015

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REPORT DOCUMENTATION PAGE

Form Approved OMB No. 0704–0188

1. AGENCY USE ONLY *(Leave blank)*	**2. REPORT DATE** September 2015	**3. REPORT TYPE AND DATES COVERED** Master's Thesis

4. TITLE AND SUBTITLE
LEARNING TO SEE THE OPPORTUNITIES IN CRISIS AND CATASTROPHE: A DECISION MAKER'S GUIDE TO THE ISSUE-ATTENTION CYCLE

5. FUNDING NUMBERS

6. AUTHOR(S) Kimrey, Christopher M.

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
Naval Postgraduate School
Monterey, CA 93943-5000

8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING /MONITORING AGENCY NAME(S) AND ADDRESS(ES)
N/A

10. SPONSORING/MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES The views expressed in this thesis are those of the author and do not reflect the official policy or position of the Department of Defense or the U.S. Government. IRB protocol number ____N/A____.

12a. DISTRIBUTION / AVAILABILITY STATEMENT	**12b. DISTRIBUTION CODE**
Approved for public release; distribution is unlimited	A

13. ABSTRACT (maximum 200 words)

Emerging problems often surprise lawmakers and agency officials and result in rapid, reactive governance. The political attention an issue receives may or may not be sufficient to resolve the emergent problem and in many cases may be an over-reactive auto-response dictated by public opinion and issue salience.

This thesis examines the emergence of congressional post-crisis attention and uses statistical analysis to demonstrate the primary characteristics that influence the emergence of attention pertaining to a crisis. Furthermore, this thesis has established a repeatable model whereby an emerging crisis can be evaluated by its characteristics to predict the likely reaction of government. This thesis uses quantitative methods to simplify the complexity posed by future crises in an effort to avoid sporadic governance. Recognition of the potential for reactiveness in decision making may be the key step to creating a culture of controlled, proactive agenda setting.

The merits of this research transcend the organizational or political future of a single entity or specific stakeholder. Ideally, this work will provide an alternate method to observe and study the dynamics of emerging crises and episodic attention, providing an opportunity to analyze, comprehend, and then react differently.

14. SUBJECT TERMS	**15. NUMBER OF PAGES**
issue-attention, crisis emergence, punctuated equilibrium, policy window, congressional attention	125
	16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	**18. SECURITY CLASSIFICATION OF THIS PAGE**	**19. SECURITY CLASSIFICATION OF ABSTRACT**	**20. LIMITATION OF ABSTRACT**
Unclassified	Unclassified	Unclassified	UU

NSN 7540–01-280-5500 Standard Form 298 (Rev. 2–89)
Prescribed by ANSI Std. 239–18

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LEARNING TO SEE THE OPPORTUNITIES IN CRISIS AND CATASTROPHE: A DECISION MAKER'S GUIDE TO THE ISSUE-ATTENTION CYCLE

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Submitted in partial fulfillment of the
requirements for the degree of

**MASTER OF ARTS IN SECURITY STUDIES
(HOMELAND SECURITY AND DEFENSE)**

from the

**NAVAL POSTGRADUATE SCHOOL
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ABSTRACT

Emerging problems often surprise lawmakers and agency officials and result in rapid, reactive governance. The political attention an issue receives may or may not be sufficient to resolve the emergent problem and in many cases may be an over-reactive auto-response dictated by public opinion and issue salience.

This thesis examines the emergence of congressional post-crisis attention and uses statistical analysis to demonstrate the primary characteristics that influence the emergence of attention pertaining to a crisis. Furthermore, this thesis has established a repeatable model whereby an emerging crisis can be evaluated by its characteristics to predict the likely reaction of government. This thesis uses quantitative methods to simplify the complexity posed by future crises in an effort to avoid sporadic governance. Recognition of the potential for reactiveness in decision making may be *the* key step to creating a culture of controlled, proactive agenda setting.

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EXECUTIVE SUMMARY

Emerging problems often surprise lawmakers and agency officials and result in rapid, reactive governance. Stakeholders and special interest groups, galvanized by widespread concern and common purpose hasten policy—such was the case in the creation of a homeland security organization after September 11, 2001. In other cases, such emerging problems only garner a scant amount of attention and may or may not result in any political consideration. The political attention an issue does receive may or may not be sufficient to resolve the emergent problem and in many cases may be an over reactive auto-response dictated by public opinion and issue salience.

This study illustrates there are specific variables and distinctive characteristics of crises as they emerge that enable and accelerate the emergence of post-crisis attention and give an issue the power to compel change in public and political opinion. The research of this study demonstrates there are specific combinations of forces more likely to result in or influence emergent attention than others. In addition, it shows an interrelationship of characteristics of crises to what Dr. Anthony Downs termed the issue-attention cycle and the emergence of political opportunity[1] and what Dr. John Kingdon terms the policy window.[2]

This thesis examines the emergence of post-crisis congressional attention and demonstrates the primary characteristics that influence the emergence of attention using statistical analysis and fundamental formulas of physics. This thesis will show that black swans, wicked problems, and complex domestic and social issues are an outcome of the crises' characteristics and result in episodic attention differently. Furthermore, this thesis examines the degree of influence specific characteristics, such as economic impacts and fatalities have on major crises, such as natural disasters, and establishes a

[1] Anthony Downs, "Up and Down with Ecology: The 'Issue-Attention Cycle,'" *Public Interest* 28 (summer 1972): 39–50, http://www.unc.edu/~fbaum/teaching/articles/Downs_Public_Interest_1972.pdf, 41.

[2] John W. Kingdon, *Agendas, Alternatives, and Public Policies*, 2nd ed. (New York: Longman, 2003), 170; Bryan D. Jones and Frank R. Baumgartner, *The Politics of Attention: How Government Prioritizes Problems* (Chicago: University of Chicago Press, 2005), 20.

multidimensional model of emerging crises using probabilities, laying the bedrock to define new theoretical models of episodic attention in Congress.

By applying quantitative methods, this study helps simplify the complexity posed by future crises through estimation of the value of crises and their potential outcomes. The ability to evaluate emerging crises based on their "value" enables researchers to postulate risk of possible outcomes in an effort to avoid reactive, sporadic governance. Recognition of the potential for reactiveness in governance may be *the* important step to creating a culture of controlled proactive agenda setting. The merits of this research transcend the organizational or political future of a single entity or specific stakeholder. Ideally, this work will provide an alternate method to observe and study the dynamics of emerging crises and episodic attention, creating the opportunity to analyze, comprehend, and then react differently.

A. METHODOLOGIES OF ANALYSIS

This study set out to successfully prove the hypothesis questioning the characteristics of crises and their influence on subsequent attention. Emerging attention in this work was examined by applying Dr. Larry Gerston's qualitative characteristics, combined with other contemporary theories, to a sample of 25 crises quantitatively. Gerston postulated that specific characteristics of crises, such as intensity, gestation, resources, and size, influence how people think about crises as they occur.[3] For this study, the sample of crises was evaluated, determining for each the mathematical mean of congressional attention annually over the crises' entire duration, how rapidly attention emerged, and the total number of hearings. Aggregated data on congressional hearings was then compared against the assigned numerical value of the characteristics as they applied to each crisis. By assigning quantitative values in place of qualitative descriptors for each characteristic, crisis values were derived that were successfully correlated to the degree of congressional attention an emerging crisis received, measured in congressional hearings. Reviewing over 10,800 congressional hearings from 1942 to 2012, the use of

[3] Larry Gerston, *Public Policy Making: Process and Principles*, 2nd ed. (New York: M.E. Sharpe, 2004), 25.

statistical method multivariate and regression analysis established that congressional attention is indeed influenced by the characteristics of emerging crises, that not all crises prompt the same degree of attention, and produced several other significant findings related to the power of emergent crises, all of which expand the current body of knowledge of issue-attention.

Consistently, findings of the analysis underscored the relationship between crises' characteristics and emergence of congressional attention, both in the total amount of attention and rate of emergence. Based on findings, there now remains no question that characteristics such as the size of an event, the intensity and rate of emergence, the resources required to solve the problem, and the cause and culpability all contribute to the emergence of the issue-attention cycle and subsequently the policy window post-crisis.

B. OUTCOME OF ANALYSIS

The following are the outcome of the analysis:

1. When all crises in the sample were compared against their rate of emergence and total crisis-value, the 25 crises grouped into three distinct clusters: black swans, wicked problems, and social crises. The highest value cluster represents the top 20 percent of all crises in the sample, indicating a natural tendency of chaotic occurrences to organize in an orderly Pareto distribution.

2. As the characteristics of a crisis develop over time in their value (e.g., their intensity, the resource impacts), the degree of attention changes. One example would be in the case of immigration where a notable transition in intensity and resources consequently increased the issue's degree of attention from approximately 10 hearings annually to nearly 60 hearings annually—over 400 percent. This alone validates the primary hypothesis of this thesis in that as the value of a crisis changes, so does the congressional attention.

3. There is a high level of statistical significance, confirmed by secondary testing, supporting the hypothesis that specific characteristics, such as intensity, gestation, resources, size, and fault, influence the emergence of congressional attention post-crisis.

4. Validation testing for black swans revealed a statistically significant correlation between the value of the crises' characteristics and the total number, average number of congressional hearings, and the rate of acceleration of attention. Correlation and significance were meaningfully higher than when included in the sample of all crises. This fact indicates clearly not all crises correlate in the same manner.

5. The results of this study indicate characteristics of crises affect black swans, wicked problems, and social crises each differently. Analysis indicates wicked problems are generally less affected by characteristics than social crises and black swans.

6. Characteristics such as intensity and cause, when occurring independently, are not as influential on emerging crises as other characteristics or when acting synergistically.

7. There is a relationship of high statistical significance between economic loss and natural disasters. Likewise, there is a statistically significant relationship, though to a slightly lesser degree, of fatalities to natural disasters. However, as noted in the analysis of all crises above, the intensity (degree of economic impact and fatalities) alone does not affect the crisis as strongly as when accompanied by other factors.

8. Eight in 10 major natural disasters occur within eight years of a previous event, with only 20 percent of major natural disasters occurring greater than nine years from the previous. Of these occurrences, there is a high probability a major natural disaster resulting in significant congressional attention will occur at least once every 5.4 years. It is likely the number of hearings will total near 11, depending on the damage and number of fatalities among other factors.

9. Each major crisis attention cycle lasts approximately two to three years. In nearly all cases, the decline in attention from its highest point will be approximately 67 percent from the previous year.

In defining the patterns of episodic attention and political opportunity in crisis, there is an underlying ethical risk present. Significant crises often necessitate the re-examination, re-assessment, and, in some cases, re-structuring of the status quo political arrangements. An acute understanding of the transfer of attention and punctuated shifts of

policy can better enable the astute, savvy politician to influence the attention cycle for gain, or it may likely present opportunity to not *invest* where it may not appear to be lucrative to do so for the long term (i.e., there is no potential for growth or long-term political opportunity). There is a risk created through this study that one might be more advantaged to align oneself with the emerging crisis likely to be most salient and repudiate those that are not.

The more concise defining of reactive congressional attention enables anticipatory governance and thus limits reactive governance post-crisis. This key benefit of theoretical advancement adds new considerations to the current process of political agenda development as it pertains to the generation and acceptance of policy alternatives. Currently, political opportunism typically caused by reactive attention of Congress results in fertile opportunities for policy supporters to champion preferred solutions or attention to particular issues, and provides opportunity for key political figures to initiate punctuated growth of government.[4] This feature of reactive governance is precisely what the theory of anticipatory governance is designed to prevent. Advocates of particular policy solutions know that when the policy window is open, it is open only for a short time. They also know the policy window is the sine qua non of money; where there is money, there is potential for shifts or shoring up of power. There is a conflict dynamic within the political reform craft by those within the elite intent on conservative reforms to protect status quo, and those intent on more liberal reform of institutional arrangements. Changes in policy goals, institutions, and polity settings influence revenue flow, thus influencing power distribution.

This thesis has established a foundation to better understand the scope and duration of attention post-crisis. This understanding enables efforts to develop a model to support anticipatory governance of catastrophic events. Based on the data analysis in this study, it is clear events will continue to occur with regularity and that events are somewhat predictable in their scope and scale, as is legislative reaction to such crises. By using statistical analysis and probability models, this thesis demonstrates a viable method

[4] Kingdon, *Agendas, Alternatives, and Public Policies,* 99.

of clarifying emergent crises. The results of analysis better define the problem space and second order effects of a catastrophe and help mitigate reactive governance that tends to occur as a result of emerging crises. This is an area continually deserving of more scholarly attention. The subject covered in this study is merely a foundation; yet, it has proven the depths to which this subject can be mined.

There are several areas regarding issue-attention that should be considered for further study, including: The duration of the issue-attention cycle and whether prolonged, heightened awareness creates a proportionate increase in negative sentiment. An understanding of the issue-attention cycle and its consequences will more fully aid emergency managers, response professionals, and presidential staff in preparing both short- and long-term risk-management messaging and strategies. Strategic communications of this nature may be that which is communicated post-crisis intentionally to appropriately frame narratives of local and state officials, the public, and media.

Defining the emergence, timing, and duration of the issue-attention cycle to more accurately predict the policy window. Although contemporary research does examine what contributes to the emergence of issues, quantifying the timing and duration of issue-attention may prove a far more challenging task. Additional study should be undertaken to determine the re-emergence of the policy window without a triggering event. This dynamic occurs after most major crises and relates to congressional attention, social media attention, and public opinion polling—as shown in this thesis.

By accepting new theories on legislative attention resulting from problem emergence, especially theories that better establish what causes, shapes, and retains episodic attention, institutions will be challenged to react more predictably. The competing narratives in this effort will be those that suggest history cannot foretell anything about future events, nor can the reaction to previous unpredictable events portend anything about future behavior. This is erroneous, myopic thinking. Evidence reinforces, with a high degree of statistical significance, certain crises correlate strongly to specific reactions in legislature.

A better understanding of the economy of crisis, the probability, and the risks posed by a crisis to a community better allows for arguments of return on investment and intentional, strategic messaging. By building a comprehensive landscape of a variety of dissimilar crises, one can see the patterns of attention emergence, calculate probability of occurrence and size of events, and develop programs that represent "over the horizon" preparedness and mitigation activities by investing in the necessary resilience needed to combat the ill effects of crisis. When the behavioral aspects of issue-attention post-crisis are known to decision makers, it should be more evident that an initiating event should not be needed to pressure change. This changes the requirements of Kingdon's tenants,[5] maybe even changes the notion of a policy window.

[5] Kingdon, *Agendas, Alternatives, and Public Policies*, 170; Jones and Baumgartner, *The Politics of Attention*, 20.

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ACKNOWLEDGMENTS

Thank you to my wife, Lisa; my children Ethan, Madison, Taylor, Ashley, and Sadie; my advisor, Dr. Chris Bellavita; and second reader, Dr. Ted Lewis. Without your support, I likely would not have completed this project. To Lauren Wollman, thank you for being an encouragement and a mentor during this monumental research task. Thanks for being part of my thesis team.

To my children—my hope is that through my diligent pursuit of academic excellence, I leave some sort of impact on you, and that you might commit yourselves to lifelong learning and an unrelenting pursuit of excellence in everything you do.

The quality of a person's life is in direct proportion to their commitment to excellence, regardless of their chosen field of endeavor.

Vince Lombardi

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I. INTRODUCTION

A. PROBLEM STATEMENT

Hypothesis: There are specific variables that enable and accelerate the emergence of attention post-crisis and give an issue the power to compel change in public and political opinion. The hypotheses driving this inquiry endeavors to demonstrate through a repeatable model a pattern in emerging crises of specific forces that more strongly influence emerging problems than others. Research deduces there are specific combinations of forces such as size, intensity, timing, resource draw, fault, and cause that are more likely to result in or influence emergent issues than others.

Every once in a while, there are certain events—catastrophic occurrences—that alter how we live and how we behave. These punctuating events, unexpected occurrences resulting in periods of measurable reactivity, have the power to influence what people pay attention to and ultimately determine the shape of government. Since September 11, 2001, the federal government has spent over $800 billion on homeland security and related enterprises, $300 billion more than Roosevelt's total New Deal program adjusted for inflation.[1] Similar to the rapid growth of government after the Great Depression, there has been significant punctuated growth in government and expense to bolster security programs across the world.

Rahm Emanuel famously observed, "In crisis is opportunity."[2] What he did not suggest was that in opportunity is also displacement; the new most important issue replaces what was once important. After crisis, the polity reactively jumps from

[1] Total New Deal program cost of $36.36 billion adjusted for inflation in 2014 equaled $500.12 billion. "CPI Calculator Information," Federal Reserve Bank of Minneapolis, accessed May 18, 2015, https://www.minneapolisfed.org/community_education/teacher/calc/; Katrina Vanden Heuvel and Eric Schlosser, "America Needs a New Deal," *The Nation*, September 27, 2008, http://www.thenation.com/article/america-needs-new-new-deal.

[2] Gerald F. Seib, "In Crisis, Opportunity for Obama," *The Wall Street Journal*, November 21, 2008, http://online.wsj.com/news/articles/SB122721278056345271.

metaphorical cliff to cliff. Within the Department of Homeland Security, this has resulted in an environment of shifting priorities and perpetual instability.[3]

Harvard professor and paleontologist Stephen Gould suggests in the evolution of species, radical growth is a result of episodic events and/or catastrophic changes that cause indiscriminate disruption and consequently result in sharp, punctuated changes.[4] His theory suggests rather than the species adapting through micro evolution (e.g., small adaptations over time), adaptation of species occur all at once due to significant macro events that change the fabric of ecosystems and force large-scale adaptation. Gould's theory, aptly called punctuated equilibria, has been applied in the political science community to help explain the episodic nature of growth in government.[5] This thesis endeavors to examine the episodic nature of governance, namely what causes Congress to focus on certain emerging crises yet not others. It also looks at what conditions or characteristics of a crisis become the "tipping point," resulting in the rapid emergence of attention that establishes the fertile ground for legislative change.

The underpinning priority of this thesis is to contribute to the body of knowledge on emerging problems by mapping problems as they emerge and subsequent emergence and decline of political opportunity, termed the "policy window."[6] Dr. John Kingdon theorizes the policy window, when the result of a crisis, is a quickly fleeting opportunity to initiate legislation not otherwise on the political agenda. Kingdon attributes the staying power of the policy window in part to issue attention- or the public's ability to remain focused on a single problem after emergence.[7]

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3 Peter May, Ashley Joachim, and Joshua Sapotichne, "Policy Regime and Governance: Constructing Homeland Security" (presented at the 10th Public Management Research Association Conference, Ohio State University, 2009), http://tinyurl.com/qfz7a4h, 32.

4 Stephen Jay Gould, *Punctuated Equilibrium* (Cambridge, MA: Harvard University Press, 2007), http://site.ebrary.com/id/10318436, 39, 82–115.

5 Bryan D. Jones and Frank R. Baumgartner, *The Politics of Attention: How Government Prioritizes Problems* (Chicago: University of Chicago Press, 2005), 19.

6 John W. Kingdon, *Agendas, Alternatives, and Public Policies*, 2nd ed. (New York: Longman, 2003), 165–169, 203.

7 Kingdon, *Agendas, Alternatives, and Public Policies*, 170; Jones and Baumgartner, *The Politics of Attention*, 20.

This thesis demonstrates the importance of certain characteristics in emerging crises such as an event's size and impact, and how these characteristics influence the public and polity's prioritization of problems. For the purposes of this thesis, the term "crisis" is defined as "a serious threat to the basic structures or the fundamental values and norms of a system, which under time pressure and highly uncertain circumstances necessitates making vital decisions."[8]

Dr. Larry Gerston posits specific characteristics of crises contribute to issues reaching the public agenda. In the same manner, combinations of variables may create a synergistic effect, resulting in varying levels of attention to emerging problems. Consider briefly the attention a devastating hurricane or tornado garners compared to the number of deaths on U.S. highways each day. Although one claims the lives of tens of thousands over the course of any given year (when considered cumulatively, over twice the population of Rhode Island since 1950), the other is tragic (sudden), claiming its lives up front. The atypical nature of the natural disaster, coupled with its concentrated force, causes a more acute reaction; the event becomes seemingly more urgent.

Punctuated attention caused by the episodic nature of emerging problems tends to result in extreme and rapid reactions of officials and thus causes the subsequent displacement of other issues on the public agenda.[9] By more fully understanding emerging problems, what influences these issues, and what reaction they may garner, agencies, such as Department of Homeland Security, can more fully align themselves post-crisis.[10] This thesis is crafted considering the necessity to more fully demarcate the future disciplines of homeland security and guide the reaction of governance post-crisis.

As theorized by Gerston and others, emerging problems command attention by their salience (how novel the occurrence), their intensity (how rapidly they emerge), and

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[8] Arjen Boin, *The Politics of Crisis Management: Public Leadership Under Pressure* (Cambridge: Cambridge University Press, 2005), 2.

[9] Ibid.

[10] Jones and Baumgartner, *The Politics of Attention*, 4–5.

the resources the problem demands (what will it "cost" to solve).[11] In discussing the influence of these variables, specifically their combined influence on emerging crises, Dr. Gerston explains, "The more the categories grow in tandem, the more likely that they collectively will present a triggering mechanism."[12]

Furthermore, it is known the initial reaction to emerging problems is based on two things. First is pre-established bias, such as social construction (how the problem is framed), which contributes directly to defining the span (life cycle) of issue-attention. Second is by the public and thus polity's reaction to the emergent problem.[13] Compelling work has been conducted in the area of psychological bias in organizations and politics, suggesting that even when crisis poses a clear danger, political actors may do nothing until it is too late.[14]

B. RESEARCH QUESTION

The primary question this thesis will seek to answer is:

Do specific variables, such as scope, intensity, timing, resources, cause, and fault enable and accelerate the emergence of attention post-crisis and give an issue the power to compel change in public and political opinion?

Other questions this thesis seeks to answer:

- When does the attention fade?
- How long is the cycle of attention (policy window)?

This thesis poses and will provide evidence to support several hypotheses:

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11 Larry Gerston, *Public Policy Making: Process and Principles.* 2nd ed. (New York: M.E. Sharpe, 2004), 25; Dominic Johnson and Elizabeth Madin, "Paradigm Shifts in Security Strategy: Why Does It Take Disasters to Trigger Change?" *Natural Security: A Darwinian Approach to a Dangerous World*, ed. Raphael D. Sagarin and Terrence Taylor (Berkeley: University of California Press, 2008), 226.

12 Dr. Larry Gerston, email correspondence, October 17, 2014.

13 David A. Rochefort and Roger W. Cobb, *The Politics of Problem Definition: Shaping the Policy Agenda* (Lawrence, KS: University Press of Kansas, 1995), 10.

14 Dominic Johnson and Simon Levin, "The Tragedy of Cognition: Psychological Biases and Environmental Inaction," *Current Science* 1, no. 11 (2009): 1593–1603.

1. For the influence of combined characteristics on crises:

Null hypothesis (H_0): Specific characteristics such as intensity, gestation, resources, size, and fault, when combined are not statistically significant contributors to the emergence of congressional attention post-crisis.

Hypothesis 1 (H_1): Specific characteristics, such as intensity, gestation, resources, size, and fault, when combined are contributors to the emergence of congressional attention post-crisis.

2. For the influence of characteristics on crises independently:

Null hypothesis (H_0): The characteristics size, resources, and fault, when considered independently are not statistical significant contributors to the emergence of congressional attention post-crisis.

Hypothesis 2 (H_2): The characteristics size, resources, and fault, when considered independently are statistical significant contributors to the emergence of congressional attention.

3. For the influence of select characteristics on crises independently:

Null hypothesis (H_0): Characteristics, such as intensity, timing, and cause, measurably influence the emergence of congressional attention post-crisis when occurring independently.

Hypothesis 3 (H_3): Characteristics, such as intensity, timing, and cause, do not measurably influence the emergence of congressional attention post-crisis when occurring independently.

4. For the influence of characteristics on various categories of crises:

Null hypothesis (H_0): Specific characteristics, such as intensity, gestation, resources, size, and fault, when combined do not result in a statistically significant difference in emergence of attention during crises, such as black swans and complex social crises, compared to crises such as wicked problems.

Hypothesis 4 (H_4): Specific characteristics, such as intensity, gestation, resources, size, and fault, when combined result in a statistically significant difference in emergence of attention during crises, such as black swans and complex social crises, compared to crises such as wicked problems.

5. For the influence of economic impacts and fatalities on congressional attention:

Null hypothesis (H_0): Specific characteristic subsets of intensity, such as number of fatalities and economic impacts, cannot be correlated to an

increase in the number of congressional hearings after major natural disasters.

Hypothesis 5 (H_5): Specific characteristic subsets of intensity, such as number of fatalities and economic impacts, influence the number of congressional hearings after major natural disasters.

This thesis, using the characteristics proposed by Gerston, Rochefort, and others, examined the degree of influence of characteristics on congressional attention and post-crisis issue emergence.[15] In addition, this thesis considered the application of theories on the episodic nature of attention and looked at both issue congruence and issue attention and their role in the emerging crisis, as it contributed to the primary hypotheses of this thesis.

C. SIGNIFICANCE OF RESEARCH

Emerging problems often surprise lawmakers and agency officials and result in rapid, reactive governance. When galvanized by widespread concern and common purpose, stakeholders will hasten policy. This was the case in the creation of a homeland security organization after September 11, 2001.[16] In other cases, emerging problems only garner a scant amount of attention and may or may not result in any political consideration. The political attention an issue does receive may or may not be sufficient to resolve the emergent problem and in many cases may be an over reactive auto-response dictated by public opinion and issue salience.[17]

The issue of the unpredictability of emergent problems is difficult because emerging crises are random as is public opinion and the public mood that reacts to them. The public's emotional attachment to an issue may or may not be strong enough to warrant an issue rising to the public agenda. In some cases, the public's sentiment to an issue is strong enough to prematurely displace other significant social and political issues

[15] Gerston, *Public Policy Making*, 30; Rochefort and Cobb, *The Politics of Problem Definition*, 20;

[16] May, Joachim and Sapotichne, "Policy Regime and Governance," 31.

[17] Ibid., 32.

(e.g., displacement of terrorism by Hurricane Katrina, economy, and corporate scandals).[18]

This thesis contributes to the broader body of knowledge of crisis management by defining the primary theories that immediately influence emerging problems and crises, and it demonstrates the interrelated influences of the crisis environment on the overall power-potential of a developing crisis. Lastly, this thesis identifies a relevant and rich theoretical lens through which to examine theories of issue-attention, shedding light on how, when, and why Congress makes policy decisions on emerging events. The work of this thesis successfully quantifies the six most influential factors that impact congressional policy—whether that policy be reactive or over reactive.

D. RESEARCH METHOD

As noted in the initial hypotheses, if the broader purpose of the thesis is to map the connection between crisis and opportunity, then the primary objective is to demonstrate the importance of specific characteristics in emerging crises, such as an event's size and impact, and how these characteristics influence the public and polity's prioritization of problems. This thesis incorporates some elements of the *grounded theory* method, employing the data collection and coding methodologies and the interplay between data collection and theoretical analysis to aid in either proving or disproving this thesis.

The following model was developed specifically for evaluating issue-emergence.

Model One relates the total value of crisis to number of congressional hearings and can be expressed as:

> T = m * A, where m = f (scope, intensity, time, resources, fault, cause),
> and A = (Vf - Vi) / time; where Vf = n of hearings at initial emergence, and Vf = n of hearings at height

[18] Donald F. Kettl, *System under Stress: The Challenge to 21st Century Governance*, 3rd ed. (Thousand Oaks, CA: Sage/CQ Press, 2013), 159.

1. Object / Sample

The empirical analysis of this thesis examines recent crises and their emergence, examining the degree of attention and the rapidity of attention emergence, the average number of congressional hearings for each crisis, and the combined value of six predetermined characteristics: scope, intensity, timing, resources, cause, and fault.

2. Sample Selection

The first step in researching the power of emerging crises as catalysts is to define what a crisis is and what it is not. Determining what constitutes a crisis or catastrophe versus a more normalized event aids in determining the scope of the research collection and what will be included in the analysis. For instance, the frequency of the problem is extremely relevant to whether the issue is considered a crisis or catastrophe as the more frequently the problem is experienced, the less urgent it becomes. A variety of crises fitting the definition were selected for this thesis. All 25 selected crises varied by size, intensity, duration, frequency, and cause.

3. Limits of the Study

This study did not endeavor to determine *why* specific characteristics affect the public's reaction to emerging crisis, such as the theory of bounded rationality and social identity theory. The psychology of crisis is a complex topic outside of the scope of this thesis. Concepts such as risk aversion and optimism bias were not discussed in this thesis, or if they are introduced, they were covered in a superficial manner, introduced as broad concepts. This study also did not examine the media's role in the phenomenon of public attention. Determining salience of an issue by establishing media attention is a thesis all its own and is certainly deserving of additional research. Because there are many crises of varying types used in this study, there was not an individual case study conducted for each type. This thesis examined specifically six characteristics posited by Gerston, Rochefort, and others; this does not to imply a complete list, nor that these comprise the *only* characteristics that might influence emergent attention. The above mentioned are all areas where further research would bring a great deal of value to the understanding of crisis emergence, strategic communications, and complexity theory.

4. Data Sources

The data used in this study was aggregated primarily from the University of Texas Austin and the Library of Congress. Codebooks and datasets reflecting congressional hearings, *New York Times* publications, public opinion polling, among others, were all used to support the positions of this thesis.[19] Data on congressional hearings from 2010 to the present were collated from Congress.gov. The National Archives was used to validate previous data or for any data required prior to 1945.[20]

In addition, public opinion data collected on current crises was aggregated from public opinion polling using several sources, such as Rasmussen, Pew, and Gallup, to examine the public's view of "most important issues" affecting Americans. To examine the issue-attention cycle and its influence, data was compiled from Gallup, Rasmussen, and Pew Research Center reports on domestic homeland security and the perceived threats posed by future terrorist attacks dating from 2001 to present. Each of the surveys employed in this research included over 1,000 survey respondents, sampled randomly from voter-aged U.S. citizens. The average accuracy for the surveys included is 95 percent with an average 3.5 percent (plus or minus) margin of error.[21] The remaining references used for this study consisted of current news media articles on emerging crises and literature from a variety of disciplines in public policy presenting a variance of theories apropos to the topic of emerging crises and episodic attention.

5. Type and Mode of Analysis

This thesis research employed a three-phased approach to data collection and analysis: open, axial, and selective coding. These are described below.

a. Selection of Problems

The first step of this research was to select a group of crises for the study and the characteristics defining the issue post-event. In the following phases, research compiled

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[19] May, Joachim and Sapotichne, "Policy Regime and Governance," 13.

[20] The National Archives can be found at http://www.archives.gov/congress/hearings.html.

[21] Margin of error refers to the variance in survey result data. For example, if a survey notes 45 percent of respondents, 3.5 percent margin indicates a range from 41.5 percent to 48.5 percent.

raw data on congressional hearings and records. In addition to calculating crisis-emergence, data was evaluated to determine if there was any variance between crises.

b. Gathering Data

Data was aggregated from a variety of sources by searching each "set" of raw data, whether on immigration, terrorism, or global warming, and looking for each mention of key subject terms. Each data set had approximately 600–1,000 hearings and records from 1946 to 2012. Over 10,800 hearings were examined for this thesis.

c. Coding

Coding is typically done in three stages. In open coding, data was labeled and categorized into "piles" of common data. Common characteristics were assigned to the sample of crises and qualitative values applied to each characteristic. Drs. Gerston, Rochefort, and Cobb's characteristics of triggering events (introduced in the literature review) were assigned to the sampling of crises. The characteristics' definitions were redefined to be more specific, enabling that each crisis could later be segregated into common groupings using *axial coding*. Axial coding further differentiates open data into "coding paradigms."[22] In this method of coding, the researcher seeks out ideas on how data is inter-related. For this research, axial coding was accomplished by assigning a quantitative criterion for each qualitative value created during open coding. This action applied a corresponding numerical value to each qualitative value. A numerical scale of one through three was used to represent qualitative values.

Selective coding further relates coded data to other sets of coded data in an effort to discover causal relationships and other patterns associated with the coded data. Congressional hearing data was collected for each crisis coded using the above methods. As noted previously, raw data was aggregated for each crisis in the open coding phase. During selective coding, keyword searches were conducted to determine the number of hearings and records produced on a particular issue at its emergence compared to at the height of the crisis. This was done by sorting data sets comprised of congressional

[22] David Garson, *Grounded Theory* (Raleigh, NC: North Carolina State: Statistical Assoc. Publishing, 2013), 9.

hearings by the frequency of hearing topics throughout the life cycle of the given crisis. Calculations differentiated crises by the degree of congressional attention received over time. Congressional hearings and records were summed, averaged, and the crisis' rate of emergence calculated as part of the selective coding method.

d. Validating Hypotheses

After the selective coding stage and some basic hypotheses were established, field testing was required to test the generated hypotheses. Whether tested in "real-time" or via hypothetical vehicles, the results either validated or invalidated the relationships inferred in the hypotheses. Validation was conducted by *evaluating* and *comparing* data as described below.

e. Evaluation

Once a complete dataset was populated for this study, data analysis looked at each crises' emergence and decline separately, as a larger grouping, and lastly comparing one issue against another.

f. Comparisons

Last, issues of similar type and kind (e.g., natural disasters, viral epidemics, long-term problems) were examined comparatively to determine how changes in the emerging issues' characteristics affect their potential power to influence attention and change. Described in full below, determining the potential influence of an emerging crisis was achieved by applying the event's value to basic principles of physics, namely those used to calculate acceleration and force where force is calculated as the sum of an object's mass times its acceleration. In this study, acceleration is the initial momentum (the number of hearings at emergence) subtracted from the highest momentum divided by the duration of emergence from one to the other.

g. Conclusions

Any conclusions were drawn at this stage. Each crisis was examined against the data from other crises to determine whether specific variables (or combinations of

variables) or those crises exceeding a certain weighted value tended to emerge faster or stay relevant longer than others that were not weighted as high.

All data supporting this thesis and employed to defend hypotheses stated herein were analyzed using the analytics programs MATLAB® and SPSS® to identify trends and patterns related to emergence and to validate statistical significance of relationships between seemingly unrelated data. As a matter of good scientific practice, all statistical analysis for this study used a confidence level of $\alpha = 0.05$. A significance value of less than $P = 0.05$ represents a statistically significant relationship when conducting multivariate and univariate data analysis. $P = 0.01$ represents a highly significant statistical relationship.[23] The P-value, Wilks's lambda, and the F-ratio value were the primary means by which statistical significance was demonstrated in this thesis.

6. Outcome

This thesis has established a repeatable model whereby an emerging crisis can be evaluated by its characteristics to predict the likely reaction of government. This thesis demonstrates quantitative methods to help simplify the complexity posed by future crises through estimation of the value of crises and their potential outcomes. The ability to evaluate emerging crises based on their value enables researchers to postulate risk of possible outcomes in an effort to avoid reactive, sporadic governance. By having a more acute sense of the reaction of governance of particular emerging crises, one can better socialize potential crises and the reactive outcomes. Recognition of the potential for reactiveness in governance may be *the* most important step to creating a culture of controlled proactive agenda setting. The merit of this research transcends the organizational or political future of a single entity or specific stakeholder. Ideally, this work will provide an alternate method to observe and study the dynamics of emerging crises and episodic attention, providing an opportunity to analyze, comprehend, and then react differently.

[23] A value of $P = 0.01$ represents a chance of less than 1 in 100 the relationship between variables is uncorrelated; therefore a 99 percent probability exists of influence.

II. LITERATURE REVIEW

> Are things really that bad? I am skeptical concerning all highly alarmist views because so many previous prophets of doom and disasters have been so wrong concerning so many so-called 'crises' in our society.
>
> Anthony Downs[24]

The following literature review provides a brief summary of contemporary thinkers in public policy and endeavors to combine common hypotheses and theories relevant to this thesis. Existing research, summarized in the following, suggests there are several features that correspond to the emergence of public agenda and policy in post-crisis events. The key features of policy development discussed in this literature review include the triggering event, the emergence of the issue-attention cycle, subsequent emergence of what is termed the policy window, and contributors to the fore mentioned theories.

A. DEFINING CRISIS

The term crisis, aptly described as the dominant motif of the "rhetoric of calamity" is surely one of the most ambiguous and simultaneously ubiquitous terms in public policy circles.[25] A search for the term "crisis" results in nearly 57 million responses in just less than .35 seconds, depending on the day. An Internet word-cloud search shows everything from the Ebola crisis to the banking and healthcare "crisis."[26] From the Greek word *kríno*, meaning to judge, assess, or decide, the word *crisis* as defined by Oxford means "a time of intense difficulty, trouble, or danger."[27] Rochefort and Cobb of Northwestern and Brown universities respectively describe the term as denoting a circumstance of dire nature where corrective action is long overdue. In their work, *Problem Definition: An Emerging Perspective*, they note the thin veil separating a

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[24] Anthony Downs, "Up and Down with Ecology: The 'Issue-Attention Cycle,'" *Public Interest* 28 (summer 1972): 55, http://www.unc.edu/~fbaum/teaching/articles/Downs_Public_Interest_1972.pdf.

[25] Rochefort and Cobb, *The Politics of Problem Definition*, 20.

[26] The search was performed using the word-cloud search site Clusty.com, searching the word "crisis."

[27] *Oxford English Dictionary*, 2nd ed. s.v. "crisis," accessed July 2, 2015, http://www.oed.com/.

problem from a crisis and observe it is a matter of mere viewpoint and often semantics.[28] Yet, most scholars tend to agree the crisis has three primary characteristics: threat, uncertainty, and urgency.[29]

"危机," Chinese for crisis (pronounced wēijī) is a compound word comprised of *danger* (wei) and *opportunity* (ji). However, the symbol is often misrepresented in the English pop culture as *crisis* and *opportunity*.[30] Rather, the correct interpretation is a "critical point," referring to a specific opportunistic moment- a sort of tipping point- resulting from a precarious event.[31] This is similar to the Greek interpretation of *krino* above.

Dr. Thomas Birkland, University of Albany SUNY, proposes a clear delineation between the terms *crisis*, *disaster*, and *catastrophe*.[32] Adapting from the tourism industry, Birkland notes a *crisis* as an organizationally caused event (e.g., Exxon *Valdez*), a *disaster* as an event beyond organizational influence or control (e.g., September 11, 2001), and *catastrophes*, which are disasters on a macro-scale that render governments unable to respond (e.g., Katrina, Southeast Asia Tsunami, 2011 Japanese Tsunami).[33]

Theoretical physicist Dr. Per Bak and Dr. Charles Perrow introduce theories on probability and *normal accidents.*[34] *Normal accidents* are defined as "events that are

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[28] Rochefort and Cobb, *The Politics of Problem Definition*, 21.

[29] Boin, *The Politics of Crisis Management*, 1–3; Georgio Boustras and Nikolaos Boukas, "Tourism and SME Sectors," *Proceedings of the 1st International Conference in Safety and Crisis Management in the Construction*, ed. Georgio Boustras and Nikolaos Boukas (641–657), 2011, http://www.bookpump.com/bwp/pdf-b/2335578b.pdf, 641.

[30] Victor H. Mair, "Danger + Opportunity ≠ Crisis: How a Misunderstanding about Chinese Characters has Led Many Astray," September 2009, http://www.pinyin.info/chinese/crisis.html

[31] Ibid.

[32] Ronald W. Perry and Enrico L. Quarantelli, *What is a Disaster?: New Answers to Old Questions* (Philadelphia: Xlibris, 2005), 46; Thomas A. Birkland, *Lessons of Disaster Policy Change after Catastrophic Events* (Washington, DC: Georgetown University Press, 2006), 2.

[33] Ibid.

[34] Charles Perrow, *Normal Accidents: Living with High-Risk Technologies* (New York: Basic Books, 1984); Per Bak and Stefan Boettcher, "Self-Organized Criticality and Punctuated Equilibria," *Physica D* 107 (1997): 143–150, http://arxiv.org/abs/cond-mat/9701157.

unexpected, unintentional, and likely result in damage or injury."[35] Dr. Nassim Taleb, another contemporary thinker on crisis complexity, proposed the notion of *black swans*, defined by Oxford as "unpredictable or unforeseen event, typically one with extreme consequences."[36] Although Taleb's definition fits some emerging crises, it is arguable not all fit into this category. The incident impacts a single part of the system whereas the accident is the failure of the entire system.[37] As a result of increased and tighter couplings of interrelated networks, there are some who believe crises are moving beyond the "typical" or knowable to the chaotic environ of "*terrae incognitae*."[38]

The definition of black swan is similar to that of catastrophe, which is defined by Oxford as "an event causing great and sudden damage."[39] The word is derived from the Latin catastropha, meaning *kata-* "down" and *strophē* "turning."[40] The term *catastrophe*, seemingly added to the English lexicon circa 1755 by Samuel Johnson via the *Dictionary of the English Language*, can likely be attribute to the Lisbon earthquake of 1755, yet found its origin circa the fourth century AD with the playwright Donatus.[41] The term *catastrophe*, of theatrical origins, refers to the unraveling of events after building to *epitasis*.[42] For this thesis, the definition of crisis will be as follows: "a serious threat to the basic structures or the fundamental values and norms of a system, which under time pressure and highly uncertain circumstances necessitates making vital decisions."[43] This definition represents the most complete rendering of the fore mentioned academic theories on crisis.

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[35] Perrow, *Normal Accidents*, 5.

[36] *Oxford English Dictionary*, 2nd ed., s.v. "black swan."

[37] Lewis, *Sand Piles*, 76.

[38] Patrick Lagadec, *A New Cosmology of Risks and Crises Time for a Radical Shift in Paradigm and Practice* (Route de Saclay, France: cahier de recherché, 2008), 5.

[39] *Oxford English Dictionary*, 2nd ed., s.v. "catastrophe."

[40] Lagadec, *A New Cosmology of Risks and Crises*, 5.

[41] Jörg Trempler, "Catastrophes and Their Images: Event and Pictorial Act," *Res: Anthropology and Aesthetics* (spring/autumn 2013): 201.

[42] Michael J. Sidnell, ed., *Sources of Dramatic Theory* (Cambridge, England: Cambridge University Press, 1991), 79–81. Attributed to a fragment from Donatus, *On Comedy and Tragedy*, c. 4th century AD.

[43] Boin, *The Politics of Crisis Management*, 2.

B. SCHOOLS OF THOUGHT ON POLICY EMERGENCE

It is important to acknowledge what others have said about issue emergence and political science. There are varying schools of thought in political science and the public policy process. Some see the discipline as a hard science where standard rules and scientific rigor apply and results are often predictable and repeatable (as in mathematics and physics). One of the more often referred to contemporaries of the discipline, Dr. Paul Sabatier suggests there are clear stages of the public policy process, that the process works within a given framework, and that the cycle of growth and contraction of government is dynamic, yet somewhat predictable.[44] Sabatier, like others, agrees to the understood course of the recognized political process. What is unsettled are the influences to the political agenda—what drives an issue from initial emergence into the political arena and are the variables static, or are they as other would suggest, more dynamic and less predictable?

In nearly all cases, authorities on the subject agree the discipline of public policy is not entirely a predictive science. Some, like Dr. John Kingdon, theorize the political process is *not entirely* random but is a predictive process to a point.[45] Kingdon suggests the public policy process consists of structured couplings and general constraints that correspond to make the process somewhat repeatable. Others see the discipline not as a hard science, but as a science continuously changing and more opaque. For example, Dr. Gabriel Almond compares the science of public policy metaphorically using clocks and clouds. He suggests that all things fit along a continuum spanning from entirely random and unpredictable events to entirely ordered and controlled events (clouds being representative of randomness and the clock of ordered processes). In presenting his position, Almond makes several observations, noting using mathematics to develop predictive models in public policy may be a flawed effort. He maintains that although some manner of political process can be predicted, the emergence of politics is based on

[44] Paul Sabatier, *Theories of the Policy Process* (Davis, CA: Westview Press, 2007), 5.

[45] Kingdon, *Agendas, Alternatives, and Public Policies*, 206.

"accidental conjunctions by events that have a low probability of occurring."[46] Almond's position is supported by Dr. Larry Gerston, who suggests that public policy is not an ordered process akin to hard sciences, but it is instead based on unpredictable variables and attitudes of the general public that may coincidentally overlap with improbable events.[47]

Politically and logically, the debate over colloquial terms such as "hard" and "soft" science matters little. Political science is a science of the democratic process, for which empirical data is derived from human behavior and decision making, and therefore rests somewhere in the middle with elements of both. The analysis of historical data to develop predictive models is the work of economists and tends toward hard sciences with scientifically repeatable methods.[48] The study of social and normative behavior akin to public decision, opinion, and decision making is the work of sociologists and psychologists and closer to soft science. The research conducted for this project used data (both historical and data extrapolated from more recent case studies) to investigate whether specific variables and indicators, when combined, could predict issue-attention and policy cycle emergence. Accordingly, this thesis demonstrates that the policy cycle emergence can be modeled as a statistical phenomenon that obeys a probability distribution. Furthermore, issue-attention is significantly correlated with measurable characteristics (scope, intensity, timing, resources, cause, and culpability).

One of the foremost premises for public adoption of issues or public adaptive issue-emergence is the application of social identity theory in the formation of public opinion. There is no debate as to whether public opinion affects emerging policy—one commonly begets the other; however, there are some cases, such as the economic crisis in 1890, where public and even popular party opinion were ineffective in changing the economic strategy of the day. The immediate decisions of the presidency had the

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[46] Gabriel A. Almond and Stephen Genco, "Clouds, Clocks, and the Study of Politics," *World Politics* 29, no. 4 (1977): 497.

[47] Gerston, *Public Policy Making*, 8.

[48] It should be noted there is some debate as to the accuracy of economists and their general agreement among their community. Noah Smith, "Should We Trust Economists?" *The Atlantic*, June 4, 2013, http://www.theatlantic.com/business/archive/2013/06/should-we-trust-economists/276497/

potential to either "sustain Americanism or… plant Socialism."[49] According to Higgs, "Governments even in a representative democracy, may seize more power than the majority of citizens wishes to grant them, but they may also refuse or exercise powers that many citizens would thrust upon them."[50] More modern examples germane to the issue of U.S. domestic security are evident in the implementation of the PATRIOT Act and the Transportation Security Administration.[51] The question is what defines the magnitude of an emerging issue or problem. Social identity theory applied to this question suggests social dynamics accentuated by race, economic status, or other social identifiers (e.g., urban versus suburban, regionalism) contribute to the definition of issue emergence.[52] This social dynamic has been postulated as an alternative underpinning to modern democratic theory.[53] Furthermore, social identity theory, as presented by Cobb and Elder, may help explain why some issues, such as civil rights, immigration, and others, remain on the public agenda and capture the public's attention longer than others.

C. ISSUE-ATTENTION CYCLE

The concept of issue-attention was developed by economist Anthony Downs in the 1970s to describe the rise and fall of public attention to issues deemed important. Downs theorized an issue would emerge from a pre-state, grow in prominence as a social issue until such time the public became discouraged by the "costs" of change.[54] After the realization of costs, the issue would slowly decline in importance and return to a post-problem state. A very clear example of this can be seen in the Interstate-35W bridge collapse in Minneapolis. The issue of transportation infrastructure became a regional issue very quickly and resulted in near immediate action on the part of regional

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[49] Robert Higgs, *Crisis and Leviathan: Critical Episodes in the Growth of American Government* (New York: Oxford University Press, 1987), 78–79.

[50] Ibid.

[51] Joel Griffin, "TSA Fights Losing Battle in Court of Public Opinion," *Security Info Watch*, June 14, 2013, http://www.securityinfowatch.com/blog/10961654/tsa-constantly-finds-itself-in-catch-22-situations.

[52] W. Lance Bennett, *Public Opinion in American Politics* (New York: Harcourt Brace Jovanovich, 1980), 236–237.

[53] Roger Cobb and Charles Elder, "The Politics of Agenda Building: An Alternative Perspective for Modern Democratic Theory," *The Journal of Politics* 33, no. 4 (1971): 822.

[54] Downs, "Up and Down with Ecology: The 'Issue-Attention Cycle,'" 50.

politicians. However, the same cannot be said nationally, although it was observed by the National Transportation Safety Board that there was a need. The cost of correcting the issue nationally, which measured in the trillions, likely contributed to the issue's decline in issue-attention, according to Downs's model.[55]

The concept of issue-attention is valid, can be clearly seen in post-crisis environments, and is a generally accepted academic theory. Issue-attention is a recognized dynamic in the development of public opinion and is referred to in a variety of references, including a variety of academic journals and studies on issue-attention. Typically, when issue-attention is discussed, it is done so in the forum of media influence on public opinion.

There is a strong connection to Downs's issue-attention cycle applied to the aftermath of urban riots in 1960 made by Drs. David Olson and Michael Lipsky. Their work suggests after considering myriad plausible reasons for the issue disappearing from political agenda, issue-attention may have been the cause.[56] Dr. Lance Bennett of Yale explains, "When an issue moves toward resolution or has reached its climax, issues can be bumped by other emergent issues."[57] As noted earlier, Bennett and Barber suggest there are strong social identity under-currents that influence public opinion and issue-attention in certain emerging problems. Specifically, Bennett argues that the 1960 riots became increasingly tenuous by the disparity in race and social status.[58] Elder suggests race and social class may be the very issue that prevented issue-emergence on the public agenda.[59] In more recent occurrences, Bennett's use of the 1960s riots may be applicable to the Ferguson and Baltimore riots in 2014 and 2015. According to Bennet et al., these initiating events are what trigger issue-attention. There is among social scientists the

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[55] Claude Haberman, "A Disaster Brought Awareness but Little Action on Infrastructure," *New York Times*, March 3, 2014, http://tinyurl.com/lp66z5b

[56] Michael Lipsky and David J. Olson, "The Processing of Racial Crisis in America," *Politics in Society* 6, no. 1 (1976): 79–101.

[57] Bennett, *Public Opinion in American Politics*, 236–237.

[58] Ibid., 243.

[59] Cobb and Elder, "The Politics of Agenda Building," 903.

belief that the triggering event also initiates the emergence of the policy process and establishment of a salient issue on the public and possibly the political agenda.

D. TRIGGERING EVENTS

Gerston, in his work *Public Policy Making: Process and Principles*, suggests accuracy and predictability do not exist in public policy.[60] According to Gerston, persistent characteristics of emergent issues likely to result in the policy cycle include those that cause attention (salient issues), actors on those issues (political actors and the public), resources affected by the issue (social dynamics, economic, etc.), institutions that engage (special interest groups), and the level of government that addresses the issue.

Gerston also remarks on the concept of pre-conditions, as cited in Dr. John Kingdon's work.[61] As presented by Gerston, and Kingdon, preconditions evolve due to "triggering mechanisms" or emerging crises.[62] A precondition may be a social dynamic (e.g., minority demographic) or an engineering precondition (e.g., the New Orleans levee conditions prior to Hurricane Katrina). This is an important point because it substantially builds or dovetails in other contemporary works. Gerston explains, "Triggering mechanisms are important in reordering the consciousness levels of both the public and the public policy makers."[63] The term "triggering mechanism" or "focusing events" refers to the initiating incident or crisis that transforms a problem from its latent pre-condition state to a recognizable emergent state.

Dr. Thomas Birkland suggests the ebb and flow of political agenda development is based on events that emerge to the public's attention, either slowly or quickly. He also notes that the issues that develop more rapidly have a stronger impact on policy development and can be better influenced by social demands. Birkland offers events, such as Pearl Harbor, September 11, 2001 and the Exxon *Valdez* disaster, that were all focusing events—rapid catalysts for latent preconditions to grow as emergent issues.

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[60] Gerston, *Public Policy Making,* 8.

[61] Kingdon, *Agendas, Alternatives, and Public Policies*, 23.

[62] Ibid., 94.

[63] Gerston, *Public Policy Making,* 23.

What Birkland terms focusing events are different than Gerston's triggering mechanisms, although one concept can be seen as a contributor to the other.[64]

In his work *System under Stress,* Dr. Thomas Kettl refers to focusing events as "policy lightning" (simply a repackaged name for the same concept).[65] By drawing an interesting correlation from paleontologist Stephen Gould's work, Kettle theorizes that the development of politics is achieved through a combination of punctuated equilibrium and incrementalism as presented by Charles Lindblom.[66] This combination of emerging patterns implies the emergence of attention in some cases occurs rapidly, whereas it occurs more slowly in others. Dr. Frank Baumgartner and Bryan Jones reject the idea of incrementalism as described by Lindblom, noting that change, rather than incremental, is more rapid and pronounced.[67] A compelling case is made for the concept of punctuated equilibrium by Dr. Robert Higgs in his seminal work *Crisis and Leviathan: Critical Episodes in the Growth of Government*.[68] Most prominent authors on the subject agree, however, it is in this emergent state that issues become prime for development. Punctuated equilibrium does correlate to Anthony Downs's issue-attention cycle, and the potential to develop valuation of focusing events to determine likelihood of political development.[69]

E. THE VALUE OF FOCUSING EVENTS

Gerston offers four variables that influence the value or significance of a focusing event. These include:

Scope—How large is the triggering event?

Intensity—Represented by the violence of emergence.

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64 Thomas A. Birkland, *Agenda Setting, Public Policy, and Focusing Events* (Washington DC: Georgetown University Press, 1997), 20–22.

65 Kettl, *System under Stress*, 8–9.

66 Charles E. Lindblom, "The Science of Muddling Through," *Public Administration Review* 19, no. 2 (1959): 80.

67 Frank Baumgartner and Bryan Jones, *Agendas and Instability in American Politics* (Chicago: University of Chicago Press, 1993), 5–25.

68 Higgs, *Crisis and Leviathan*, 15–16.

69 Downs, "Up and Down with Ecology."

Time—How long did the issue take to emerge?

Resources—How significant is the resource impacts (financial / people / tools).[70]

According to Gerston's research of the above variables, not all are weighted equally. It appears that the more intense the event (i.e., the more rapidly it escalates), the more effective it is as a focusing event and more likely it will be to result in an emergence of the issue-attention cycle.[71] Drs. David Rochefort and Roger Cobb further Gerston's work on characteristics of emerging problems, suggesting the most prominent aspect of problem definition stems from the question of culpability and blame. Their work *The Politics of Problem Definition* suggests crises resulting from organizational failure or failure of complex networks rather than the idiosyncratic nature of human error are more likely to result in legislative action for tighter regulation.[72] This is further supported by Dr. Deborah Stone of Dartmouth College, who offers a slightly more exacting view of the issue:

> In politics, we look for causes not only to understand how the world works but to assign responsibility for problems. Once we think we know the cause of the problem, we use that knowledge to prevent people from causing the problem.[73]

Bennett and others suggest there are additional contributors to the value of a focusing event, including media influence and special interest group support.[74] These additional influences contribute to the demand for action and consequent development of the issue on the political agenda through what is termed the "policy window."

This thesis adds to the literature by demonstrating a statistically significant relationship between issue-attention and the characteristics posited by Gerston and others. Furthermore, this work proposes quantifiable measures of Gerston's four characteristics

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[70] Gerston, *Public Policy Making*, 24–28.

[71] Ibid., 26.

[72] This is similar to the theory presented by Charles Perrow in the work *Normal Accidents*. Rochefort and Cobb, *The Politics of Problem Definition*, 13–15.

[73] Deborah A. Stone, *Policy Paradox: The Art of Political Decision Making* (New York: Norton, 2002), 189.

[74] Bennett, *Public Opinion in American Politics*, 237.

as well as those of Rochefort and Cobb. This makes it possible to correlate issue-attention emergence and intensity with crisis characteristics.

F. POLICY WINDOWS

At the height of the issue-attention cycle emerges what is termed by economist John Kingdon as the "policy window."[75] The policy window is the opportunity to implement policy post-crisis via the emergence of particular issues on the decision agenda. He offers that the policy window, although rare, is what drives major change in policy development.[76] Kingdon presents the public policy process and proposes several frameworks for the development of policy agenda.

According to Gerston, the policy window exists in some state before the triggering event.[77] This is similar to Kingdon; however, Kingdon refers to the contributors to the policy window development as streams, the confluence of which triggers the window. However, Kingdon's streams (the *problem*, the *political* state, and available *policies*) do not all enter the process at the same time.[78]

As is suggested by Gerston, the problem exists in a latent state before the "triggering event."[79] Because the policy window is a confluence of Kingdon's streams, available agendas, and political dynamics would not be known until after the event, it follows the policy window should not precede the triggering event as Gerston suggests. This point is important because it more accurately orders the sequence of issue-emergence post crisis.

G. POLICY DEVELOPMENT

Bennett suggests the broad category of issues is what helps determine their fate in the public agenda. Bennett discusses issue formation, creating three broad categories of

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[75] Kingdon, *Agendas, Alternatives, and Public Policies,* 165.

[76] Ibid., 165–170.

[77] Gerston, *Public Policy Making,* 31.

[78] Kingdon, *Agendas, Alternatives, and Public Policies,* 172.

[79] Gerston, *Public Policy Making,* 23.

political issues: structural issues, agenda issues, and crisis issues, and focuses on the development of the public opinion and its influence on agenda setting.[80] As does Thomas Dye and others, Bennett offers that special interest groups and influential individuals are those outside the political circle with the greatest chance of influencing agenda. Dye's public policy systems model suggests special interest support is an influential factor in the political agenda formation process.[81]

There is a connection to the work of Gerston, Downs, and Kingston in Bennett's general model of public opinion. Furthermore, when combined with Dye's systems model of policy emergence, a new model can be derived. Bennett's hypothesis on the process of public opinion helps derive the value of Gerston's social impact model and substantially contributes to the validity of a new combined systems model.

H. SUMMARY OF POLICY EMERGENCE THEORIES

The five categories of theories presented above work in tandem with one another.

1. The incremental or punctuated growth of government is dependent on the relevant issues established on the political agenda.
2. Unexpected crises result in the emergence of the issue-attention cycle, whereby, although not in all cases, issues are brought to the attention of public officials and special interest groups.
3. Unexpected crises resulting in issue-attention are termed "focusing events." These events are what act as a catalyst to legislative attention, as is shown in this thesis.
4. The degree and duration of attention an issue receives within the polity is termed the "policy window." Another useful way to think of the policy window is a period of legislative opportunity.
5. The above four theories are what culminate in policy development.

In Figure 1, the model created from the aforementioned theories in Chapter II, illustrates several ideas. Using two progressive models side-by-side, Figure 1 attempts to illustrate the emergence of public opinion in-step with the emergence of the issue-attention cycle and the policy window. An excellent case in which to view all of the

[80] Bennett, *Public Opinion in American Politics*, 113–114.

[81] Thomas Dyer, *Understanding Public Policy* (New Jersey: Simon & Schuster, 1998), 35.

above may be in regards to the emergence of environmental policies within the United States.

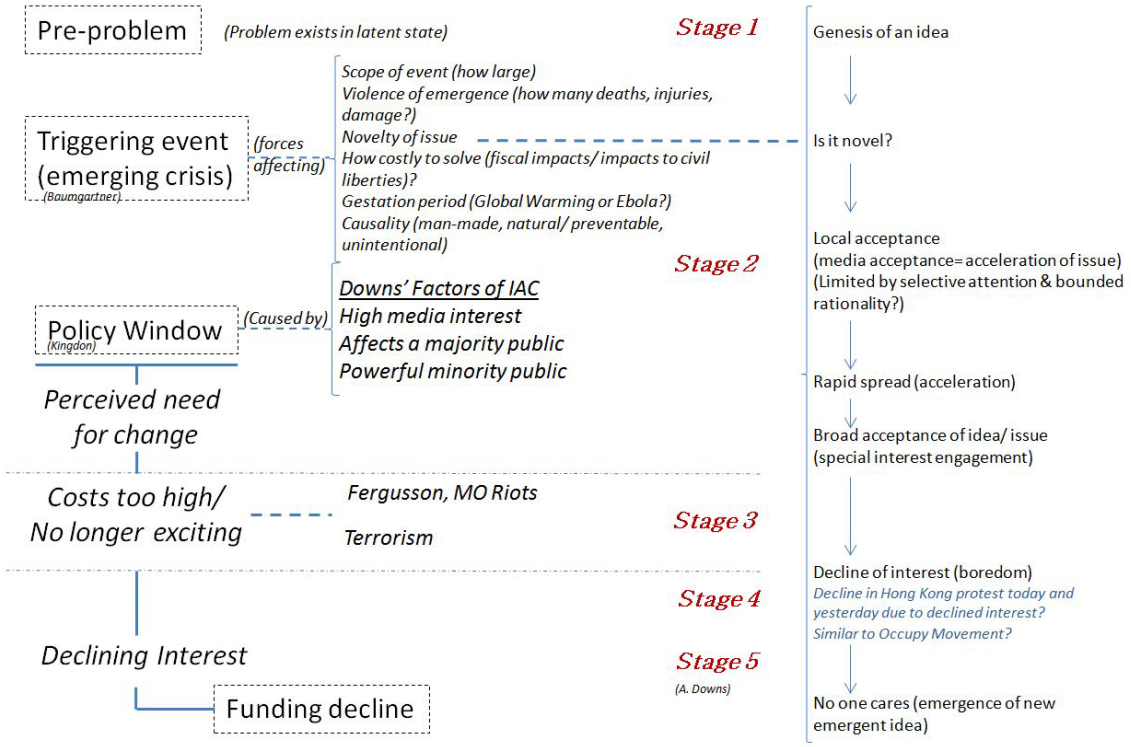

Figure 1. Combined Public Policy Theories Sequence Model, Chronological

On March 18, 1967, the Liberian-registered supertanker *Torrey Canyon* ran aground off of Land's End and the Scilly Isles, United Kingdom. The 947-foot stricken ship, unable to be freed from the reef, discharged nearly 32 million gallons of oil, spreading along the shores of the south coast of England and the Normandy coast of France.[82] In the United States, only a small minority of environmentally conscious citizens knew of this catastrophe. Environmental attention within the U.S. began to emerge gradually around this period, noted by the emergence of Secretary of the Interior Stewart Udall's *The Quiet Crisis*, a heralding piece on environmental pollution with an

82 "1967: Supertanker Torrey Canyon Hits Rocks," *BBC Web*, http://news.bbc.co.uk/onthisday/hi/dates/stories/march/18/newsid_4242000/4242709.stm.

introduction by President Kennedy, followed several years later by Rachel Carson's *Silent Spring*, a pop-culture book on irreversible human impacts on the environment.

Prior to 1969, interest in environmental issues, as noted in Figure 2 by the number of *New York Times* articles published on the subject was incremental, showing no sign of significant increase. Then on January 29, 1969, an offshore well blowout occurred six miles offshore of Santa Barbara, California. Over an 11-day period, approximately 200,000 gallons of crude oil discharged from 3,500-feet beneath the ocean.[83] The environmental disaster, when coupled with the Cuyahoga River fire the following year, became the "triggering event" for radical environmental policy change.

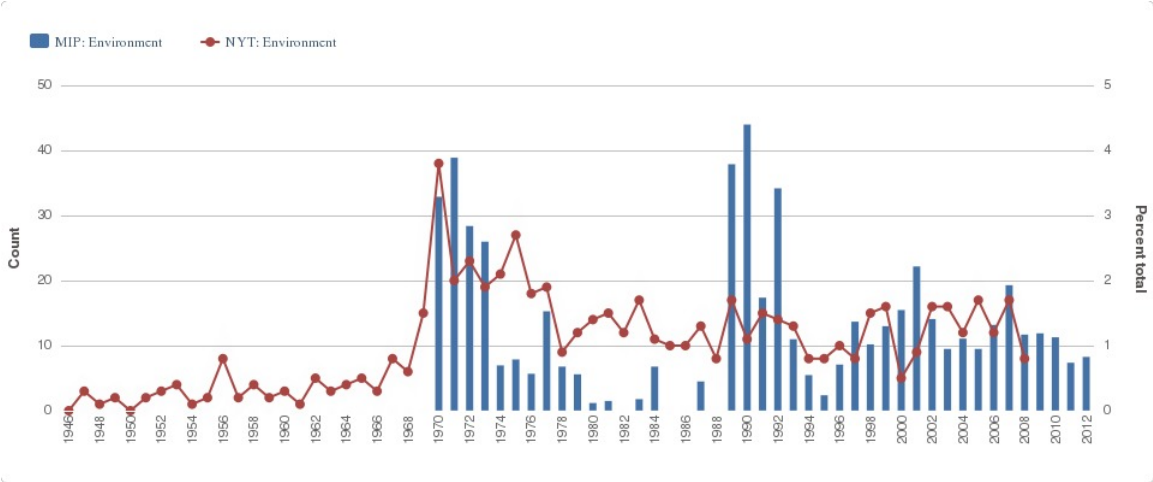

Figure 2. Environment as Most Important Problem in U.S. and *New York Times* Environment Articles from 1946–2012[84]

[83] Keith C. Clarke and Jeffrey J. Hemphill, "The Santa Barbara Oil Spill: A Retrospective," *Yearbook of the Association of Pacific Coast Geographers* 64 (2002): 157.

[84] The data used here were originally collected by Frank R. Baumgartner and Bryan D. Jones, with the support of National Science Foundation (NSF) grant numbers SBR 9320922 and 0111611, and distributed through the Department of Government at the University of Texas at Austin. Neither NSF nor the original collectors of the data bear any responsibility for the analysis reported here. "Policy Agendas Project," last modified March 17, 2014, accessed March 3, 2015, http://www.policyagendas.org/page/trend-analysis.

Following the Santa Barbara spill, the local Santa Barbara Editor Thomas Storke remarked:

> Never in my long lifetime have I ever seen such an aroused populace at the grassroots level. This oil pollution has done something I have never seen before in Santa Barbara—it has united citizens of all political persuasions in a truly nonpartisan cause.[85]

President Nixon later observed, "It is sad that it was necessary that Santa Barbara should be the example that had to bring it to the attention of the American people…The Santa Barbara incident has frankly touched the conscience of the American people."[86] Evident in these remarks and with data in Figure 2 is the emergence of both issue-attention as well as the policy window, arguably caused by Gerston's factors of scope, intensity, timing, resources, cause, and fault. Similar reactions were seen in in both Deepwater Horizon and *Exxon Valdez*, discussed in Chapter V. The following year, as a second-order effect of issue punctuation, the National Oceanic and Atmospheric Administration was created and National Earth Day drew over 20 million participants. By 1972, the Clean Water Act is passed, amending the Federal Water Pollution Control Act.[87]

The example of environmental policy displays the emergence of legislative change and U.S. government growth resulting from a manmade crisis in Santa Barbara. The events in California, compounded by the supertanker *Torrey Canyon* and the Cuyahoga River events, underscore the characteristics posed in this thesis: that post-crisis factors, such as issue intensity, size, timing, resources, cause, and culpability play a large role in the emergence of congressional and public attention within the U.S. (see Table 1).

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[85] Clarke and Hemphill, "The Santa Barbara Oil Spill," 158.

[86] Ibid.

[87] "The Modern American Experience: Timeline: The Modern Environmental Movement," *Public Broadcasting Station*, 2013, http://www.pbs.org/wgbh/americanexperience/features/timeline/earthdays/.

Table 1. Contemporary Political Science Theories on Problem Emergence and Growth in Government

Theory	Author	Description	Occurrence
Incrementalism	Lindblom	Slow, predictable growth in government.	Incrementalism represents periods of growth occurring in between periods of punctuation, as seen from 1960–1968 in Figure 2 and from 1974–1989.
Social Identity Theory	Rochefort and Cobb	Social identity theory applied suggests social dynamics accentuated by race, economic status, or other social identifiers affect outcome of how political problems are framed.	Typically seen in complex social issues such as immigration, civil rights, rioting, drug abuse, and AIDs. This theory would apply to environmental activists prior to 1968, such as Carson.
Triggering Events	Gerston	Triggering events are the unexpected events (crises), which result in reactions in the public and in polity.	The Santa Barbara well blowout acted as a triggering event. Arguably, the *Torrey Canyon* and Cuyahoga River fire also contributed to the passage of the Clean Water Act (CWA) in 1972.
Issue-Attention Cycle	Downs	Issue-attention is a five-stage process of attention (public or political) emergence resulting from an unexpected initiating event.	A clear illustration of issue-attention can be seen after September 11, 2001. See Chpt. IV. In the Santa Barbara example, this is clear through NYT articles in Figure 2 and Nixon's remarks.
Punctuated Equilibrium	Originated with Stephen Gould; popularized in public policy by Baumgartner and Jones, and others.	Punctuated equilibrium describes the accentuated episodic reaction in government to external influences.	This theory applied can be seen in Figure 2 starting in 1972. After its episodic emergence in 1968, the issue of environment remains an important issue, transitioning to a new norm.
Policy Window	Kingdon	The "policy window," or political opportunity is the result of three features: the *problem*, the *political* state, and available *policies.* A problem will exist in a latent state before emerging to the polity's attention after an unexpected event, where the problem may be addressed.	An example of the policy window in application can be seen after the Santa Barbara spill in 1969. The *Torrey Canyon* spill of U.K. primed the political landscape for legislation after the Santa Barbara spill two years later in the form of the CWA.

III. PUNCTUATED CHANGE IN GOVERNMENT

A. PUNCTUATED GROWTH

Unanticipated events, such as the Santa Barbara well blowout in 1969 described in Chapter II, disrupt the balance of governance and force change. Gradual growth in government, accentuated by periods of unanticipated rapid expansion is a generally accepted phenomenon in the study of the political sciences, earning the term ratcheting or as biologist Dr. Gould of Harvard terms, punctuated equilibria. Dr. Bryan Jones and Dr. Frank Baumgartner via their punctuated equilibrium theory popularized the latter in the social sciences. Dr. Robert Higgs, a senior fellow of the Independent Institute observed, "After each major crisis the size of government, though smaller than during the crisis, remained larger than it would have been had the pre-crisis rate of growth persisted during the interval occupied by the crisis."[93] An example of punctuated growth of government caused by the emergence of unanticipated crises (focusing events) is depicted in Figure 3.

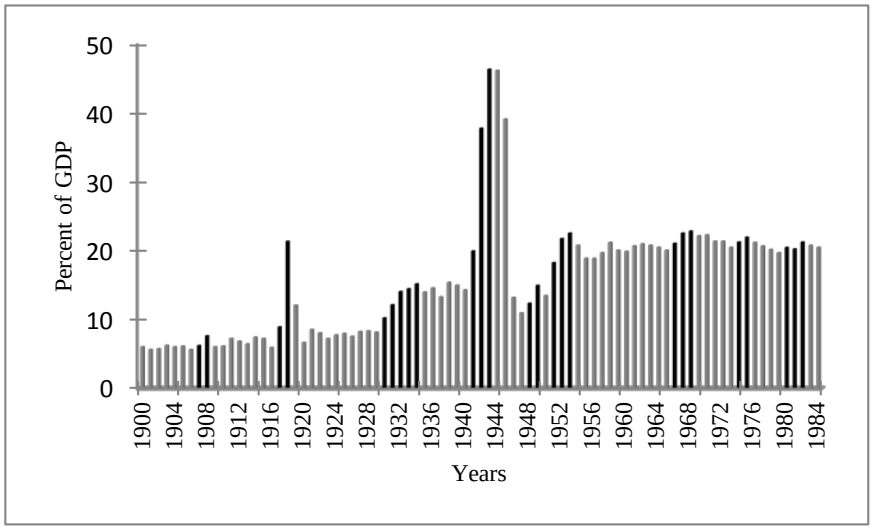

Figure 3. Government Spending Increase for Goods and Services as Percentage of GDP[94]

[93] Higgs, *Crisis and Leviathan*, 30.

[94] Ibid., 21.

The incremental and punctuated expansion of government is visualized in Figure 3, which depicts the gross domestic product (GDP) from 1900 to 1984, covering periods of significant national activity including the Great Depression and two world wars. The GDP was used as it is generally accepted as one of the best indicators of the growth of government.[95] The sharp increases in GDP relate to significant episodic events or crises, which initiated incremental change (growth) in government. The first sharp increase in Figure 3 is World War I, resulting in an increase from a mean (average) of six percent to 21 percent of GDP. After the war, the GDP fell to a slightly higher than pre-war level. After the stock market crash on October 27, 1929, the GDP rose again over the following years, doubling in size from seven percent to a mean of 14 percent.[96] It remained at that level throughout the New Deal period (1932 to 1940). From 1929 to 1933, when President Franklin D. Roosevelt took office, unemployment had increased by nearly seven million to 15 million and the gross domestic product had decreased from $103.8 billion to $55.7 billion.[97] This accounts for the perceived increase in GDP over this period. The next largest periods of growth are in 1940 and 1952, resulting from World War II and the Korean War.

The effects of crisis have a similar impact on the growth of government because post-crisis society often differs significantly from the pre-crisis state. Crises are dubbed historically critical events because they directly impact the course of historical events.[98] The remainder of this chapter briefly examines unexpected crises, which resulted in punctuated change in government. These include issues of commerce as well as issues of natural disasters. Natural disasters were examined because it is these types of regular, yet unanticipated events that continue to surprise us. Understanding when and how unanticipated issues emerge to affect legislation, and how long issues stay relevant goes a long way to providing a more accurate picture of the issue-attention cycle and policy

[95] Lance T. LeLoup, *Budgetary Politics* (Brunswick, OH: King's Court Communications, 1980), 41.

[96] Higgs, *Crisis and Leviathan*, 23–25.

[97] "The Eleanor Roosevelt Papers," George Washington University, accessed May 18, 2015, http://www.gwu.edu/≈erpapers/teachinger/glossary/great-depression.cfm; William Leuchtenburg, *Franklin D. Roosevelt and the New Deal, 1932–1940* (New York: Harper Torchbooks, 1963).

[98] Higgs, *Crisis and Leviathan*, 58.

window. In turn, this enables considerations of potential policy development and political opportunity in the future.

B. INTERSTATE COMMERCE, ANTITRUST, AND OTHER MAJOR CHANGES IN GOVERNMENT

> When we consider that the theory of our institutions guarantees to every citizen the full enjoyment of all the fruits of his industry and enterprise, with only such deduction as may be his share toward the careful and economical maintenance of the Government which protects him, it is plain that the exaction of more than this is indefensible extortion and a culpable betrayal of American fairness and justice.
>
> Grover Cleveland[99]

The period of the late 1800s represented significant change in the economic and commerce structure of the U.S. This is demonstrated by several landmark federal statutes, enhancing the regulation of commerce and establishing protection against monopolies. The first, the Interstate Commerce Act of 1887, followed the completion of the transcontinental railroad, which increased U.S.-transported freight from 2.16 billion tons per mile in 1865 to 7.48 billion in 1873.[100] By 1881, the rail freight industry had increased by 113 percent to $16 billion.[101] The agricultural industry, at risk of being unfairly taken advantage of by the rail industry, began to question the absolute control railroads exercised over many parts of the country. During this period, rail was essential to moving agricultural goods to other parts of the country; therefore, it was incumbent farmers use rail transport. The opportunity to exploit a capitalistic vantage point created by this dynamic made rail industry susceptible to extortion and unfair business practices. However, the post-Civil War presidents and many in Congress generally eschewed intervention in commerce and economic matters, leaving issues of commerce to the citizens.[102]

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99 George F. Parker, *The Writings and Speeches of Grover Cleveland* (New York: Cassell Publishing Co., 1892), 72–73.

100 "Civil War and Industrial Expansion, 1860–1897 (Overview)," *Gale Encyclopedia of U.S. Economic History*, 1999, accessed February 2015, http://www.encyclopedia.com.

101 Ibid.

102 Higgs, *Crisis and Leviathan*, 82.

Under pressure from the agricultural community and the growing number of Populist supporters, the Interstate Commerce Act was passed in 1887, which created the Interstate Commerce Commission, and required a standard rate be established across the rail transport industry. Although revolutionary for its time, the law was cited as, "A delusion and a sham," which is how Senator Nelson W. Aldrich described it.[103] Enforcement of the act was insignificant at best and nonexistent at worst. Notwithstanding, this piece of legislation was one of the first significant contemporary economic legislations in U.S. history, and the first to establish standards of fair business practices in U.S. commerce.

Shortly after the Commerce Act, Congress passed the first antitrust law, the Sherman Act, in 1890. Described as a "comprehensive charter of economic liberty aimed at preserving free and unfettered competition as the rule of trade," the act was enacted to extricate the presence of emerging monopolies.[104] Citizens, including western farmers, were used to work with smaller entities during business negotiations.

The establishment of large trusts, two or three major companies that controlled nearly all wealth and movement of goods, was contrary to the post-Civil War way of life. Higgs notes, "American public opinion and legal tradition had long been hostile toward monopolies."[105] As the majority work force at the time, western farmers contributed to the narrative against large manufacturing and railroad conglomerates.[106] Two landmark antitrust laws were passed in 1914: the Federal Trade Commission Act and the Clayton Act. The acts were described as an insincere concession to public opinion, ultimately placing more burdens on the labor union than on the monopolies the acts were designed to regulate. The rapid increase in economic regulation by the federal government arguably increased the American sentiment toward Populism in the late 1890s.

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[103] Ibid.

[104] "The Antitrust Laws," Federal Trade Commission, accessed February 15, 2015, https://www.ftc.gov/tips-advice/competition-guidance/guide-antitrust-laws/antitrust-laws.

[105] Higgs, *Crisis and Leviathan*, 82.

[106] Ibid., 83.

C. NATURAL DISASTERS AND MAJOR CHANGES IN GOVERNMENT

The establishment of the Federal Trade Commission and Commerce Act represented, at the time, some of the more significant legislation to date, followed closely by several periods of tumult, including depression and war. Although it is easy to identify the incremental and punctuated growth of government resulting from triggering events by looking at economics, the same can be done when examining crises.

Since the 1950 Disaster Relief Act, there have been 12 significant legislative advancements in disaster response and mitigation, approximately one every five years (see Table 2). This study begins in 1950 because prior to then, emergency aid was provided by local or state entities; there was no federal aid for response, recovery, or mitigation. Since 1950, there have been 563 congressional hearings on natural disasters and similar catastrophes, an average of approximately 10 per year. The number of hearings annually pales to the numbers of total natural disasters, large and small, which occur nationwide annually. However, since 1950, there have only been 20 natural disasters arguably considered major, most of which resulted in legislative action of some form. As noted in the hypothesis of this thesis, the attention a crisis garners changes depending on specific dynamics of the crisis (e.g., scope, intensity, timing, resources, and cause). There are also factors that affect major natural disasters in particular (e.g., the amount of damage, economic impact, and number of fatalities). Table 2 illustrates the major natural disaster and the subsequent legislative action taken as a result of the disaster. All congressional hearings on natural disasters were compiled from 1945 to 2010. Each period of heightened attention appears to last around three years before declining. Periods of significant punctuation (e.g., after Hurricane Katrina) are typically followed by approximately a five-year period of declination before normalizing.

The cases presented above, coupled with the examples of punctuated growth via natural disasters validates the theory of punctuated equilibrium as posited by Baumgartner and Jones and supports the theory of Lindblom on incrementalism. Periods of stasis in congressional attention offset by heightened emergence and subsequent legislation express a repeating pattern of attention across multiple unrelated areas of policy making. The theories presented in this chapter, particularly the issue of punctuated

change, are important in understanding the ebb and flow of congressional attention and the issue-attention cycle as it applied to policy making in homeland security and related fields.

Table 2. Legislative Development in Natural Disasters, 1945–2010

Year	Event	Description	Legislation	Outcome
1951	1951 Great Floods	≈$935,000,000 (1951), ≈$8.4B (2014).≈500,000 displaced.	Federal Flood Insurance Act, PL 84–1016	Although introduced, program was never started because House denied funding.
1964	1964 Good Friday Earthquake	9.2 earthquake, 139 dead, ≈$311M in damage ($2.28B, 2014)	Disaster Relief Act of 1966, PL-89-769	Amended 1950 Disaster Relief Act; allowed aid to rural communities.
1965	1965 Hurricane Betsy	Hurricane Betsy flooded large areas of New Orleans for 10 days, drowning 40 people.		
1970	1970 Hurricane Camille	259 deaths, ≈$9B damage (2015)	Disaster Relief Act of 1970, PL-91-606	Amended Disaster Relief Act to include temporary housing and relocation services.
1972	1972 Rapid City Flood	$160,000,000 (1972) ≈$664,000,000 (2002)	Flood Disaster Protection Act of 1973, PL 93–234	Expanded flood insurance, imposed sanctions on flood zones communities that fail to participate.
1974	1974 Super Tornados	Super outbreak of 315 tornados.	Disaster Relief Amendments of 1974	Defined "major disaster" and "emergencies." Served as model until Stafford Act. In 1977, Act was re-authorized until 1980.
1964-1971	1964 Good Friday & 1971 San Fernando Earthquake	Good Friday- 139 deaths, ≈2.28B damage; San Fernando- 64 deaths, ≈$553M in damage.	National Earthquake Hazards Reduction Act	Bill enacted to establish research for earthquake prediction and mitigation.
1988	Various tornados, floods, hurricanes	Possibly influenced by MX City Earthquake.	1988 Robert T. Stafford Act	Increased emphasis on mitigation. Amended Disaster Relief Act 1974.
1990	1990- Loma Prieta earthquake, Hurricane Hugo, 1990 Plainfield Tornados	63 deaths and 3,757 injuries ≈ $6B damage. Quake seemed to eclipse other natural disasters.	Earthquake Hazard Reduction Amendments Act. Proposed.	Changed NEHRP's original focus on research to predict earthquakes.[107]
1993	Great Flood of 1993, Storm of the Century		1993 Robert T. Stafford Act Amendment	Enhanced focus on mitigation
2002	September 11, 2001 Terror Attacks		Homeland Security Act of 2002	Made FEMA part of new Dept. Homeland Security
2005	Hurricanes Katrina & Rita	1,953 fatalities total. ≈$108B/$12B damage.	Post-Katrina Emergency Management Reform Act of 2006 Emergency Management Authority Act of 2006	Passed in 2006. Provided for overhaul to Homeland Security Act of 2002.[108]

[107] Peter Folger, *The National Earthquake Hazards Reduction Program (NEHRP): Issues in Brief* (R43141) (Washington, DC: Congressional Research Services, 2014), http://fas.org/sgp/crs/misc/R43141.pdf, 6–7.

[108] "S.3595—United States Emergency Management Authority Act of 2006," accessed April 6, 2015, https://www.congress.gov/bill/109th-congress/senate-bill/3595.

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IV. CONCEPT OF ISSUE ATTENTION AND POLICY WINDOWS

> I am concerned for the security of our great Nation; not so much because of any threat from without, but because of the insidious forces working from within.
>
> Douglas MacArthur[109]

According to the Global Terrorism Index, published by the Institute for Economics and Peace, terrorist incidents worldwide have expanded more than 464 percent since 2001.[110] On a steady rise over the last decade, the largest increase in incidents of global terrorism occurred from 2007 to 2008, increasing 80 percent from 2,500 to over 4,000.[111] What may be more concerning than the increase in international terrorism is the comparatively low steady-state domestic terrorism activity. Of the 227 documented terrorist events occurring within the U.S. since 2001, just over one percent made significant headlines, among those including the 2012 Consulate attacks in Benghazi and the 2013 Boston Marathon bombing.[112]

On September 11, 2012, the armed group Ansar al-Saharia, Islamic militants aligned in ideology with al-Qaeda attacked the U.S. Consulate and a Central Intelligence Agency facility in Benghazi, Libya.[113] During the multi-wave attack, four U.S. citizens were killed, including Ambassador Chris Stevens. The attacks in Benghazi, Libya were immediately shrouded in partisan controversy, which dominated the media post-event.

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[109] Edward T. Imparato, *General MacArthur: Speeches and Reports 1908–1964* (Paducah, KY: Turner Publishing, 2000), 175.

[110] Institute for Economics and Peace, "Global Terrorism Index 2012," 2012, http://tinyurl.com/bnx2pwx, 6.

[111] Ibid.

[112] Global Terrorism Database, National Consortium for the Study of Terrorism and Responses to Terrorism: Center of Excellence of the U.S. Department of Homeland Security, http://www.start.umd.edu/gtd/search/. Does not include sole actor events such as school and mass shootings akin to Sandy Hook and Aurora shootings.

[113] *Select Committee on Intelligence, Review of the Terrorist Attacks on U.S. Facilities in Benghazi, Libya, September 11–12, 2012, Additional Views* 113th Cong. (2013) (4–10), https://www.congress.gov/113/crpt/srpt134/CRPT-113srpt134.pdf.

Within seven months of the Benghazi attacks, a second attack was executed successfully, this time on U.S. soil at the famed Boston Marathon, which killed three and injuring 264 others. Two ethnically Chechen brothers, one of whom was placed on the National Counterterrorism Center's terror watch list 18 months earlier, carried out the attack.[114]

Contemporary theory on public policy and political influence suggests the dynamic of focused attention is largely made (intentionally or not) through media availability and public pressure on political leaders for resolution.[115] What is focused on and the duration for which it gets attention is a result of what has been termed the issue-attention cycle. Public opinion, as suggested in contemporary public policy literature, ostensibly aids in driving public policy cycles. This thesis in later chapters will demonstrate this theory may not be true in all cases. Media availability tends to drive public opinion as noted by Page, Shapiro, and Demsey and likely contributes to Gerston's six factors, particularly *scope.*[116]

A. ISSUE-ATTENTION

The issue-attention cycle, a concept derived from economist Anthony Downs in his 1972 publication "Up and Down with Ecology: The 'Issue-Attention Cycle,'" appears to have been first introduced to homeland security circles by Professors Sharon Wrobel

[114] Mark Hosenball, "Boston Bomb Suspect's Name was on Classified Government Watch Lists," Reuters, April 24, 2013, http://www.reuters.com/article/2013/04/24/us-usa-explosions-boston-suspect-idUSBRE93N06720130424.

[115] Despite strong research data supporting the influence of media on public opinion and policy development, there are opposing arguments to what is termed the "CNN effect" on public policy outcomes and public opinion. See Warren P. Strobel, "The CNN Effect: How Much Influence Does the 24-hour News Network Really Have on Foreign Policy?" *American Journalism Review* (May 1996), Philip Merrill College of Journalism, accessed March 3, 2015, http://tinyurl.com/phmthgj; Benjamin Page, Robert Shapiro, and Glenn Dempsey, "What Moves Public Opinion?," *American Political Science Review,* 81, no. 1 (1987): 38, http://www.uvm.edu/~dguber/POLS234/articles/page1.pdf; John Peter, "Explaining Policy Change: The Impact of the Media, Public Opinion and Political Violence on Urban Budgets in England," *Journal of European Public Policy* 13, no. 7 (2006): 1053–1068, http://tinyurl.com/ndks8e7.

[116] Page, Shapiro, and Demsey, "What Moves Public Opinion?" Also see Gerston, *Public Policy Making*, 24–28.

and David Connelly in 2002.[117] The concept was reintroduced by Naval Postgraduate School's Center for Homeland Defense and Security Professor Chris Bellavita in 2005.[118]

The issue-attention cycle, illustrated in Figure 4, is a five-stage cycle through which a given crisis or event of national significance is likely to develop. Stage one includes the pre-problem, whereby the issue at hand exists in a latent state, yet commands very little attention. Dr. Walter Green describes the components of this stage as a combination of "pre-indicators" and evolving conditions.[119] Stage two occurs when the issue is thrust to the forefront of public attention. This stage is called the "alarmed discovery and euphoric enthusiasm."[120] During this stage, there will likely be a demand for action, similar to the overwhelming support of the war on terror in 2001.[121] It is at this stage where the characteristics of a crisis will be most influential. The next stage is marked by the actualization of impacts to public life and subsequent costs of implementation (including economic, sociological, psychological, political, etc.). This stage is referred to as "realizing cost of significant progress." Dr. Karen K. Petersen characterizes stage three as "the realization of the high costs and the low probability of success."[122] Stages four and five include a gradual decline to normalcy and entry into the post-problem stage. The post-problem stage can also be thought of as the pre-problem stage of the next crisis, although never quite relaxing entirely. At this stage, the issue will

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[117] Downs, "Up and Down with Ecology," 28–50. See also: Sharon Wrobel and David Connelly, "Revisiting the Issue-Attention Cycle: New Perspectives and Prospects" (presented at the Annual Meeting of the American Political Science Association, Boston Marriott Copley Place, Boston, MA, August 2002, http://www.allacademic.com/meta/p65828_index.html.

[118] Christopher Bellavita, "Changing Homeland Security: The Issue-Attention Cycle," *Homeland Security Affairs* 1, no. 1 (2005), http://www.hsaj.org/?article=1.1.1

[119] "Pre-indicators" in this stage are defined by Green as *prodromes.* The term is used to define latent pre-indicators that underlie an event yet are often not apparent until after the event has passed. Specifically, from the Latin root "pro," meaning preceding, and "drome" meaning course. Walter Green, *Command and Control of Disaster Operations* (Boca Raton, FL: Universal Publishers, 2002), http://tinyurl.com/nf8dn3s, 3–5.

[120] Jones and Baumgartner, *Politics of Attention,* 136.

[121] David Moore, "Support for War on Terrorism Rivals Support for WWII," Gallup Polls, 2003, http://www.gallup.com/poll/4954/support-war-terrorism-rivals-support-wwii.aspx.

[122] Karen K. Petersen, "Revisiting Downs's Issue-Attention Cycle: International Terrorism and U.S. Public Opinion," *Journal of Strategic Security* 2, no. 4 (2009): 1–16, http://scholarcommons.usf.edu/cgi/viewcontent.cgi?article=1063&context=jss.

likely no longer produce the required political or public support for significant action, although it may still garner attention due to policy augmentation already made.[123]

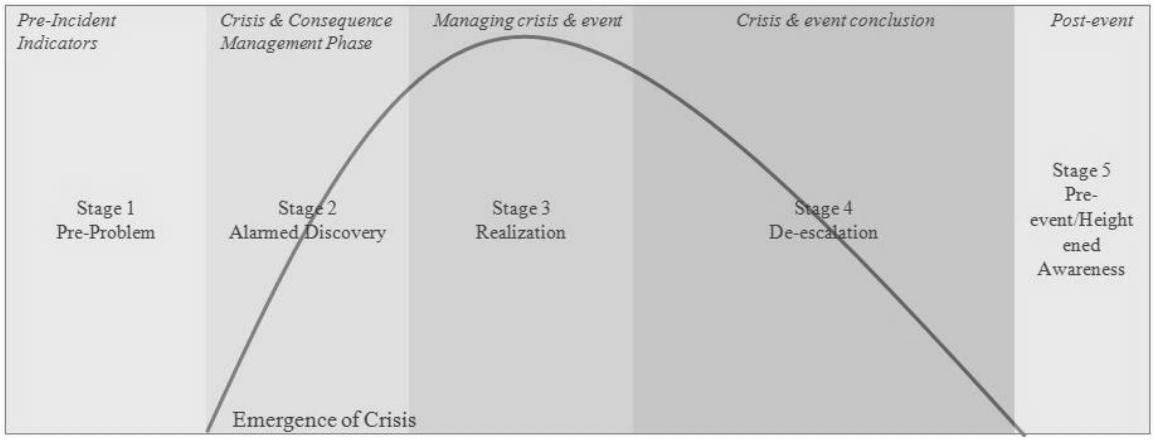

Figure 4. Issue-Attention Cycle and Phases[124]

There is much that can be inferred about the future by studying past trends. When looking historically at major national crises and the programs produced as a result of such crises, there is an evident decline in the public and political interest of those programs over time.[125] Public programs that originated from the Great Depression and World War II, such as public works, defense, and economic policy, show at least one decade of heightened organizational activity immediately post-event before declining in organizational activity an average of 69 percent over the following 10 years.[126] This decline is highly consistent with the decline of other major crises and is seen repeatedly. Although many of these historical programs have continued to fluctuate in issue-attention over time, public concern over terrorism, by contrast has decreased by 92 percent, a 22 percent steeper decrease than the historical examples noted. Rather than fluctuate, terrorism has fallen to near zero percent interest according to 2013 records; this is in spite

[123] Ibid.

[124] Downs, "The Issue-Attention Cycle," 41.

[125] This observation is shared by contemporary studies on issue-attention and historical data. See Guy Peters and Brian Hogwood, "In Search of the Issue-Attention Cycle," *The Journal of Politics* 47, no. 1 (1985): 240.

[126] Ibid., 240–244.

of domestic and worldwide terrorism events that presumably should have regenerated or created some sustained interest.[127] Other programs to show a similar pattern of rapid ascent and subsequent descent in issue attention include the war on drugs, which declined 88 percent in 10 years—cycling in a near identical manner as terrorism.[128]

The *duration* of the issue-attention cycle and what causes the cycle is also worth mentioning. Downs notes there are three distinct factors that determine whether a given issue will transition through the issue-attention cycle:

- Only a relatively small segment of the population is affected;
- Social arrangements of benefit (either to the majority or a powerful minority);
- And the problem no longer has "intrinsically exciting qualities."[129]

All three of the aforementioned should present if an issue is to enter the cycle.

Some events are noted by a rapid increase in public interest, an equally rapid decline and little time in the realization stage. An example of this would be the Minneapolis I-35W bridge collapse in 2007. The heightened attention rose rapidly and spurred local change to transportation infrastructure, but quickly declined to a pre-event or near pre-event state. "A Disaster Brought Awareness but Little Action on Infrastructure," an article in the *New York Times* in March 2014, opined on the disaster, "Even catastrophe has failed to create a sense of urgency."[130] The article underscores the impacts of Downs's third stage, the realization of costs of a solution. The decline of urgency is an example of Downs's third factor for issue-attention cycle initiation—a lack of "intrinsically exciting qualities."[131] Additionally, Gerston's characteristics may also be seen here. An initial increase in attention due to its emergence and salience quickly catches attention, but the resource implications, which would normally aid in sustaining

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[127] *Sourcebook of Criminal Justice Statistics Online* (Albany: University of Albany, 2013): http://www.albany.edu/sourcebook/pdf/t212012.pdf, 106–107.

[128] Ibid.

[129] Downs, "The Issue-Attention Cycle," 41.

[130] Haberman, "A Disaster Brought Awareness."

[131] Downs, "The Issue-Attention Cycle," 41.

the crisis in legislative attention, did not have other factors with which to interact (e.g., scale, intensity (number of fatalities, intent)).

The Boston bombing shares similarities here. The rapid ascent in stage two, which transitioned nearly immediately to the crescendo apprehension and capture of the perpetrators, led to an equally rapid de-escalation to near normalcy. Another commonality Boston and the I-35W bridge collapse share is that both issues affected only a regional population. It is reasonable to suggest issue-attention may initiate, function, and complete the cycle regionally, while garnering relatively little national interest. The exception to this hypothesis would include events of national significance, such as September 11, 2001 and Hurricane Katrina. Crises of this nature affect a specific region of the country geographically and therefore have very specific impacts locally. Yet their broader nationwide impacts are evident through policy influences, a result of significant changes in public opinion of the country's preparedness.[132] These examples of black swans (others include Deepwater Horizon, Exxon *Valdez*, and the financial crisis) have interplay between crisis characteristics resulting in more powerful attention durations.

Protracted crises and social issues affecting a broad population are a contrast to the short-lived crises noted above. These complex crises and social issues continue to generate interest in varying degrees over a longer period of time (e.g., taxes, economy, immigration, terrorism). Figure 5 shows comparatively the attitudes of the U.S. toward the most important issues facing the country from 1998 to 2013 according to data compiled by the University at Albany, Hindelang Criminal Justice Research Center.

[132] September 11, 2001 and Hurricane Katrina both resulted in significant changes to U.S. preparedness policy and noteworthy reorganization and investment in emergency preparedness and response protocols.

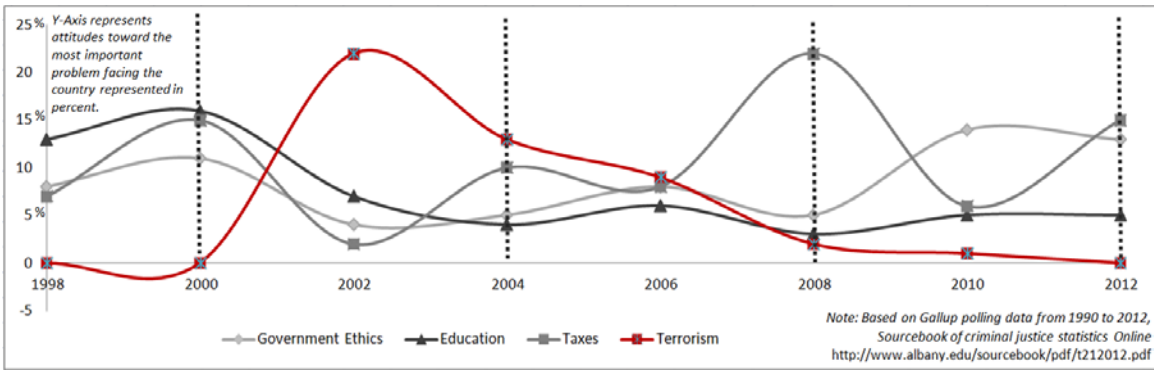

Figure 5. Terrorism Public Interest[133]

Public opinions of terrorism have been built in to Figure 5 to demonstrate the difference in various issues. In the case of terrorism, data shows an initial increase in issue-attention (heightened awareness) followed by a predictable decline and another smaller resurgence in attention. The war on drugs cycled in a near perfectly matching manner (see Figure 6.) This is an unusual pattern that appears consistently in episodic attention. Interestingly, the pattern appears on micro-cycles as well.

Although Figure 6 is measured over a period of 18 years, after the police shooting in Ferguson, Missouri of an unarmed African American teenager on August 11, 2014, social media displayed over a period of 30 hours a startlingly similar logarithmic pattern with a regression correlation value indicating a very similar pattern in attention to those in Figure 6.[134] These patterns of declination may best be explained by the diffusion of innovation phenomenon. Once the demand for attention is saturated, continued growth of attention rapidly declines to near zero and is quickly replaced by an entirely different competing demand for attention.

[133] *Sourcebook of Criminal Justice Statistics Online*, 106–107.

[134] Data is based on analysis of Tweets (#Ferguson) from August 9 to August 15, looking specifically at the night of August 13 through 15. Tweets were measured in tweets per minute from 11:41pm, August 13 to 5:44am, August 15.

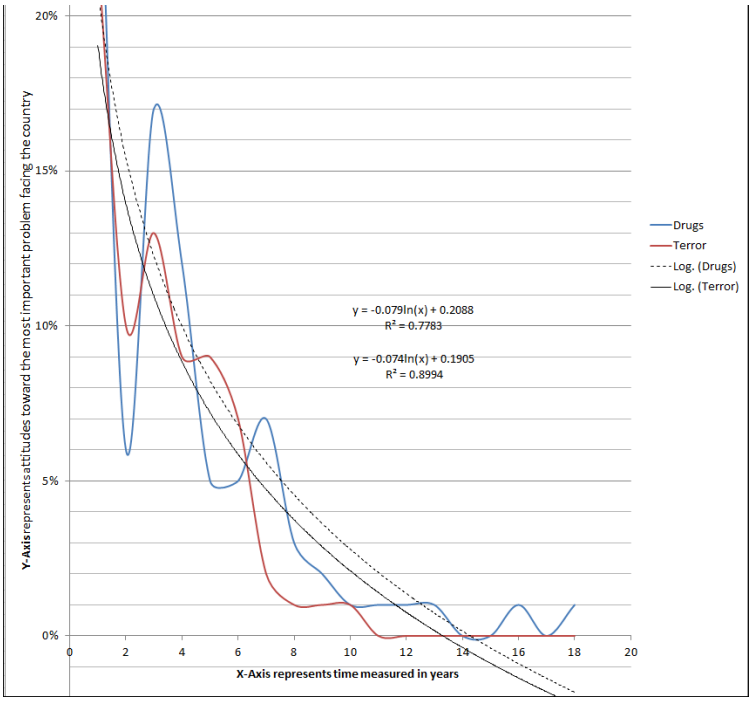

Figure 6. War on Drugs and Terrorism Compared[135]

Social issues, if they do not meet Downs's criteria yet still affect a majority population, tend to fall in to a predictable rise and fall seemingly in lock-step with the presidential election cycle as seen with ethics, education, and taxes depicted in Figure 5.[136] Contemporary political science research suggests presidents and political experts have great deal of influence on the public opinion of the nation's most important issues.[137] These observations are consistent with findings described later in this thesis in Chapter V.

B. CRISIS AND OPPORTUNITY

In crisis is opportunity. The implementation of the New Deal in the 1940s, the war on drugs, and the PATRIOT Act in 2001 are evidence of this fact. However, as seen in the example of Boston above, it is not true for every crisis. Characteristics of size,

[135] Ibid.

[136] Gary Henry and Craig Gordon, "Tracking Issue Attention—Specifying the Dynamic of the Public Attention," *Public Opinion Quarterly* 65, no.2 (2001): 169, http://poq.oxfordjournals.org/content/65/2/157.

[137] Page, "What Moves Public Opinion?," 36; Wrobel and Connelly, "Revisiting the Issue-Attention Cycle."

intensity, timing, resources, cause, and culpability, posited by Gerston, make the policy window possible. These characteristics work in concert to create an environment post-crisis where change is possible; however, when quantified, the value of these characteristics also dictates the degree of emergent attention. The PATRIOT Act passed the Senate vote with an overwhelming majority of 98 to one, just 44 days after September 11, 2001.[138] It is unlikely this monumental legislation would have been so rapidly accomplished without following a national crisis.[139] Rahm Emanuel, Chief of Staff of the Obama Administration in 2008, clearly recognized this when he stated, "You never want a serious crisis to go to waste...crisis provides the opportunity for us to do things that you could not do before."[140] This statement, made at the height of the 2008 financial crisis, succinctly alludes to the policy window post-crisis. The policy window is the limited timeframe available post-event to propose and enact relevant policy change. Accurately defining the rise and fall of issue-attention and the duration of the policy window is the next obvious step in academic research regarding this discipline in an effort to more accurately predict timing of legislation. More importantly, it is to better temper the reactive nature, either under or over-reactive after crisis.

As homeland security continues to decline as a national issue and the nation lulls to a pre-September 11 state, it is arguable the collaborative efforts that were bolstered within the homeland security enterprise post-September 11 will also deteriorate. Homeland security funding continues to decrease, as is historically common with decreases in programmatic attention. It is reasonable to expect missions to consolidate and agency rivalries to emerge as resources become scarce.[141] However, a declining budget environment may also have an inverse effect and give way to stronger interagency partnerships to meet mission demands.

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[138] "U.S. Senate Roll Call Votes 107th Congress—1st Session," October 25, 2001, http://www.senate.gov/legislative/LIS/roll_call_lists/roll_call_vote_cfm.cfm?congress=107&session=1&vote=00313.

[139] By the characteristics of Gerston, September 11, 2001 is one of the most impactful events of recent history.

[140] Seib, "In Crisis, Opportunity for Obama."

[141] Peters and Hogwood, "In Search of the Issue-Attention Cycle," 240.

Homeland security, as a national goal, an enterprise, and a department is inextricably linked to terrorism events like Benghazi and Boston. Consistent with contemporary findings on issue-attention, programmatic advancement and political attention are bound to public opinion.[142] John Kingdon's policy window finds its genesis from Downs's issue-attention cycle. The intrinsically exciting qualities of the crisis as well as other features of Downs's cycle result in the advent of the policy window. As the issue transitions through the cycle and policy is determined to be too costly or complex, such was the case of the I-35W bridge collapse, the issue wanes and attention decreases, as does allocated resources (fiscal and otherwise). The closing of the policy window is commensurate with the final stages of the issue-attention cycle. The nominal impact of Benghazi and Boston on a majority of the population failed to generate the necessary public support and thereby resulted in the lack of a potential policy window post-event.

It is arguable whether these two events ever entered the issue-attention cycle at all. According to Downs's criteria, there needs to be a majority population affected. This simply was not the case in either of these events. Although the events of Boston captivated a nation as it unfolded, only a smaller population rather than a whole nation felt the primary and secondary impacts of the event. Therefore, the event would not have entered the cycle. It is plausible the issue transitioned through the cycle at the regional-level without ever emerging fully to a national issue. This is precisely the reason the characteristics posed in this thesis are the preferred measure for determining a crises' potential for emergent attention as they account appropriately for the various characteristics of the crisis, including scope, intensity, timing, resources, cause and fault.

Regime instability, caused by new and emerging crisis, tends to result in policy uncertainty. Kettl notes, "The punctuated equilibrium model argues that this is precisely when big changes in government occur. Stress shakes up the system. Public officials react by… dramatically shifting priorities, and living the 'everything has changed'

[142] Wrobel and Connelly, "Revisiting the Issue-Attention Cycle," 5; Henry and Gordon, "Tracking Issue Attention;" John, "Explaining Policy Change."

mantra."[143] Following chapters examine specifically emergent attention in Congress and what specifically causes the distribution of attention post-crisis.

[143] Kettl, *Systems under Stress*, 156.

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V. EXAMINING EMERGENT ATTENTION IN CONGRESS

A. DATA SELECTION

The issue-attention cycle, introduced in Chapter IV, illustrates the process by which an issue captivates attention. When combined with Figure 1 and Table 1, the interrelated nature of the theories of public policy become clearly evident. Close examination of the patterns of governance, particularly after crisis, can better elucidate the dynamics of issue-attention and reactive behavior in government. This is particularly important in homeland security, as no agency seems to be more connected (and thereby reactive) to crisis than the homeland security enterprise. The dynamics of crisis attention can be continuously dissected to progressively reveal a more precise picture of legislative behavior post-crisis. In this chapter, this author will examine the constituent parts making up emergent attention post-crisis. Particularly, this chapter examines what characteristics of a crisis most strongly correlate to emergent attention by examining the relationship between crises and Gerston and Rochefort's characteristics of crises.

The research of this thesis to investigate the question of what precipitates congressional attention post-crises considered a broad variety of crises and catastrophes from the recent past. To discover what variables are more prone to prompt a rise in congressional attention, a variety of events were selected, varying in size, type, severity of impacts, and aftermath. The variety of crises examined in the analysis are key to the hypothesis of this study- that there are specific variables that enable and accelerate the emergence of attention post-crisis and give an issue the power to compel change in political opinion. Table 3 is a summary list of the crises in this research:

Table 3. Selected Crises

September 11, 2001	Aids	Illegal immigration
Katrina	NSA	Global warming
Housing crisis	Enron	Social security
Economic crash	Northridge	ISIS
Ebola	Ferguson	VA crisis
Unaccompanied migrant children	1960s riots	Exxon
Hurricane Andrew	Corporate scandal	MC252 oil spill
Child obesity	Bosnia	Oklahoma City Bombing

The data used in this study was aggregated primarily from the University of Texas Austin and the Library of Congress. Table 4 depicts the sources of data and the timeframe of data gathered from those sources.

Table 4. Source Types and Data

Source-	*Dates available-*	*Data retrieved from source-*
Library of Congress	For information pre-1946	Includes no. of hearings/ hearing data for issues.
Political Agenda Project	From 1946–2013	Hearings, media data, presidential remarks, etc.
Congress.com	From 2012–1014	No. of hearings, reports, committee activity on given issues.

Codebooks and datasets reflecting congressional hearings, *New York Times* publications, public opinion polling, among others, were used to support the positions of this thesis.[144] Data on congressional hearings from 2010 to current were collated from Congress.gov. To validate previous data or for any data required prior to 1945, the National Archives was used.

Crises selected for this study (listed above) vary in size, impact, and how they affect the public. Some issues selected have long gestation periods, developing over years, and yet other selected events emerge in a matter of days. Some have immediate and very visible impacts whereas other selected events may not have any direct, tangible impact at all. For this study, the variables examined were selected first, then a sample of crises was selected that best showed diversity in size, scale, scope, frequency, and economic or resource impacts. Doing so provided the best method of determining how specific variables affected dissimilar crises. The differentiation of variables and crises is depicted in Figure 7.

[144] May, Joachim and Sapotichne, "Policy Regime and Governance," 13.

Event Type	Features	Variables Affecting Crisis
Civil Issues Natural Disasters Terrorism & Acts of War Economic Social Epidemics Civil Issues	Size/ Complexity of Event Geographic Impacts Number of Deaths & Injuries Infrastructure Damage Economics Losses Environmental Damage Loss of Civil Liberties	**Scope** **Intensity** **Timing** **Resources** **Cause/ Intent** **Fault?**

Figure 7. Event, Feature, and Characteristics

Determining the potential influence of an emerging problem is achieved through the assignment of numerical values to characteristics of crises, differentiating the value of one crisis from another. The characteristics selected for this study are based in part on those presented by Gerston, Rochefort, and Cobb.[145] Several additional variables were added to Gerston's theories to differentiate the causal factors surrounding the emerging problem and to account for human involvement and culpability. The added characteristics were selected based on their use in other political science and problem-emergence theory, such Anthony Downs's issue-attention cycle (discussed in Chapter IV) and work by Rochefort and Cobb (see literature review).[146] The six characteristics have been assigned a scalable numerical values based on their degree of severity and how substantially they affected the emerging crisis. Table 5 shows the qualitative and quantitative assignments have been given to each characteristic.

Table 5. Characteristics of Crisis

Scope (s)	Narrow (city-wide)= 1	Moderate (regional/ statewide)=2	Broad (national)= 3
Intensity (i)	Low (no deaths, injuries, no major destruction, no economic impacts) = 1	Uneven (few deaths, injuries, little major destruction, slow to medium emergence, little economic impacts) = 2	High (significant impacts to life, safety, property, economy) = 3
Time (t)	Gradual (> 1 year) = 1	Moderate (4 mos. to 1 year) = 2	Rapid (< 4 mos.) = 3
Resources (r)	Few = 1	Medium = 2	Significant = 3
Fault (fa)	Accident/unrelated = 1	Oversight = 2	Intentional = 3
Cause (c)	Natural = 1	Manmade = 2	--

[145] Gerston, *Public Policy Making*, 30.

[146] Rochefort and Cobb, *The Politics of Problem Definition*, 21.

Within Table 5, the novelty of the event may influence the perceived intensity and salience of the problem, and therefore may influence the value of *intensity*. Other factors to consider concerning the variable of *timing* include the event frequency. A higher frequency of similar powerful events may result in greater influence on the overall perception of the issue.

Taking the product of the first four characteristics and adding the remaining values for fault and cause, whether natural or manmade, will represent the total value of the combined six characteristics from Table 5. The result will be the net value of the crisis, represented by the variable *(m)*.

In determining a crises' final value, T equals *m* multiplied by the number of hearings the issue receives from Congress over time. *Vi* represents the number of congressional hearings occurring at the initial emergence of the crisis. *Vf* represents the number of hearings on the crisis at the highest point prior to decline. The time span of emergence (in years) from initial hearings to the hearings' highest point is represented by *t*.[147] Once acceleration is determined, it is multiplied by *m*, resulting in the total value of the crisis, T. This treatment was done in an effort to determine whether there are any similarities between emerging crises in Congress and, more importantly, to determine if greater values of variables correlate in any way to the number of hearings an issue receives.

Congressional hearings used to populate this study are cataloged using two sources, University of Texas Austin College of Liberal Arts Public Policy collections and the Library of Congress for hearings after 2010. Each source provides an aggregated list of all hearings on a particular topic. The data is collected in spreadsheets and counted for the number of times a particular set of words matching with the crisis arise, either within the title or the hearing description, for instance the term "*terrorism,*" such as found in *Hearing before the Special Oversight Panel on Terrorism to Review Department of State 2000 Report on Trends in International Terrorism.*

Table 6 shows an example of this method using the issue of Hurricane Katrina.

[147] The equation *((vf-vi)/t)* represents the *acceleration* of the emerging crisis.

Table 6. Description of Data Treatment Method

Characteristic	Description	Value	Determination Method
Scope (s)	Moderate (regional)	2	Size of geographic impact
Intensity (i)	High (significant)	3	How violent was storm?
Time (t)	Rapid (< 4 mos.)	3	How quickly did it occur?
Resources (r)	Significant	3	What was the cost?
Fault (fa)	Accident/unrelated	1	Was their fault?
Cause (c)	Natural	1	What was the cause?
Sub Total (m)		56	Product from above.
Initial hearings (vi)		0	Searched for subject and in-text terms: "Katrina, Hurricane, Flooding, Recovery" in years immediately following.
Hearings at height (vf)		76	
Total hearings		208	Total no. hearings.
No. of years		3	Total yrs discussed.
Average/ yr	*(total/t)*	69	Rounded to nearest whole.
Acceleration	*((vf-vi)/t)*	25	Hearings at start subtracted from hearings at height divided by year. Total is multiplied by initial value.
Total value, T	*(m)*((vf-vi)/t)*	1418	

Table 7 contains the results of all 25 events using the method described above in Table 6. All results are approximated, rounded to the nearest whole number.

Table 7. Data Table—Quantification of Crisis and Congressional Hearings

Event	Scope	Intensity	Time	Resource	Cause	Fault	Event value	Initial C.H.	Final C.H.	Total C.H.	Years	Avg. C.H.	Acceler.	Net Value Crisis
9/11	3	3	3	3	3	2	86	4	46	232	3	77	14	1204
Katrina	2	3	3	3	1	1	56	0	76	208	4	52	19	1064
Fin. Crisis	3	3	2	3	2	2	58	8	69	100	3	33	20	1179
Exxon	2	3	3	2	2	2	40	3	30	33	1	33	27	1080
MC252	2	3	3	2	2	2	40	1	27	28	1	28	26	1040
ISIS	1	3	3	3	3	2	32	1	26	36	1	36	25	800
Ebola	3	2	3	2	1	2	39	0	19	19	1	19	19	741
Global W.	3	2	2	2	1	1	26	1	66	175	3	58	21	563
UAC	2	3	2	2	2	2	28	94	185	292	5	58	18	509
VA Crisis	3	2	2	2	2	2	28	3	18	18	1	18	15	420
ENRON	3	1	3	2	2	2	22	1	34	42	2	21	17	363
Andrew	2	3	3	2	1	1	38	1	9	14	1	14	8	304
NSA	3	2	2	2	2	2	28	1	9	9	1	9	8	224
Recession	3	2	2	3	2	2	40	1	23	85	4	21	6	220
Corp.	3	1	2	1	2	2	10	6	40	46	2	23	17	170
North EQ	2	3	2	3	1	1	38	1	5	5	1	5	4	152
SSA	2	2	1	2	1	2	11	7	64	130	7	18	8	90
Riot (60s)	2	2	2	2	3	2	21	0	8	17	5	3	2	34
AIDs	3	2	1	2	1	2	15	1	24	60	8	7	3	43
Ferguson	2	2	3	2	3	2	29	0	1	1	1	1	1	29
OKC	3	2	3	1	3	2	23	4	7	13	2	6	1.5	35
Bosnia	1	3	3	1	3	2	14	1	3	4	1	4	2	28
Global	3	1	1	2	1	1	8	9	49	327	21	15	2	15
Ill. Imm.	2	1	1	2	1	2	7	11	37	687	64	10	1	3
Obesity	3	1	1	2	1	2	9	4	5	9	4	2	1	2

Event Names Key		
9/11	*VA Crisis*- Veteran's Affairs	*Corp.*- Corporate Scandals
Fin. Crisis- Financial Crisis	*Global W.*- Global Warming	*OKC* – Oklahoma City Bombings
Exxon- Exxon Valdez	*Enron* –Enron Collapse	*Bosnia* – Bosnian Massacre (1995)
MC252- Deepwater Horizon	*House Cr.*- Housing Crisis	*1960s riots*- U.S. Civil Rights Riots
Katrina	*North. EQ*- Northridge Earthquake	*AIDs* – AIDS epidemic
ISIS	*NSA*- NSA Leaks	*Fergus* – Ferguson , MO Riots
Ebola	*SSA*- Social Security Crisis	*Climate*- Climate Change
UAC- Unaccompanied Children	*H. And*- Hurricane Andrew	*Ill. Imm.*- Illegal Immigration

B. CHALLENGES IN DATA TREATMENT

The application of quantitative measures to substitute for qualitative descriptors for each crisis presented a challenge that has yet to be resolved. The method was used despite reservations because the treatment of data is merely to represent changes due to a crises' characteristics and congressional attention received; therefore, exact measures would not greatly enhance the result. When applying general numerical values to characteristics such as scope, intensity, or period of gestation, the same values cannot be assigned to different characteristics used to describe disparate problems or events. For example, the riots in Ferguson, Missouri, which occurred on November 23, 2014, emerged very rapidly, consistent with the crises' emergence on social media.[148] The riots also ranked high due to their intensity and violent nature. Other crises ranking high in the same categories include September 11, 2001, the emergence of Islamic State of Iraq and ash-Sham (ISIS) as a threat to the U.S., and the Deepwater Horizon oil spill of 2010. As noted previously, because the assignment of quantitative values to emerging events is for illustrative purposes (e.g., to examine emerging events generally against other dissimilar events), the method was used despite the drawback.

The data was then analyzed two ways. First, all 25 events were plotted using a scatter plot with the total value of a crisis (including degree of congressional attention) representing the *x*-axis and the total characteristic value of the crisis representing the *y*-axis (see Figure 8). The *x*-axis was selected due to its reflection of the change in congressional attention on the issue, which is one of the core questions this thesis is seeking to answer.

[148] At the Ferguson's height of emergence, the issue garnered approximately 4,000 tweets a minute on Twitter, totaling nearly 1.3M tweets in one night, surpassing other current issues such as Ebola and ISIS combined. Analyzed using Topsy.com.

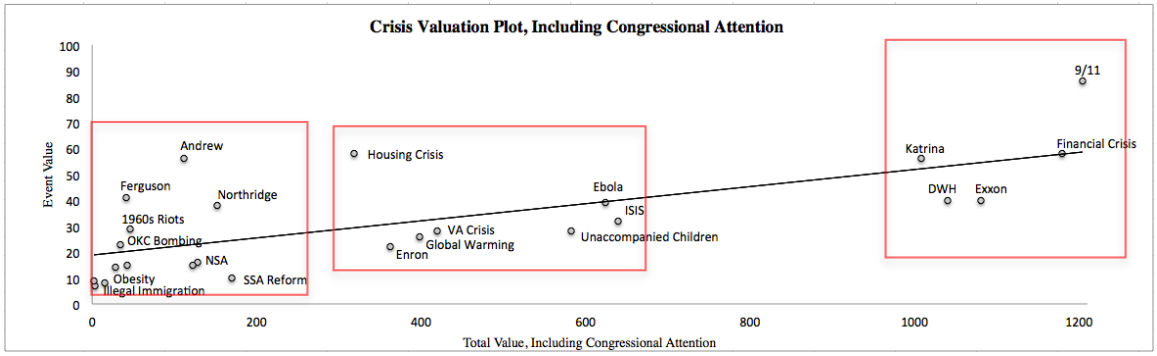

Figure 8. Distribution of Emerging Crises, Measured by Congressional Hearings

As illustrated by Figure 8, crises fall into three distinct clusters, based on values.

1. Cluster (a)

The largest cluster of issues are domestic and special interest issues, including the 1960s riots, Ferguson riots, AIDS, National Security Agency (NSA) leaks, childhood obesity, and social security. Thirteen issues make up this cluster grouping. These crises make up the majority of samples in the study. Crises in cluster (a) have a low T-value and low net value (e.g., either they elicit very little attention, or the attention they do induce occurs over a long period). Crises comprising cluster (a) are predominantly domestic in nature: special interest, immigration, civil riaghts, etc.[149] Crises such as climate change and immigration, which are also included, change in attention over time. Changes in emergence of issues within cluster (a) are what comprise Downs's 1972 thesis on issue-attention. Crises within this cluster tend to be social problems. In his work on wicked problems and emerging politics, Dr. Rittel suggests, "Social problems are never solved. At best they are only re-solved—over and over again."[150] Also included in cluster (a) are more localized natural disasters, such as earthquakes, tornadoes, and smaller hurricanes.

[149] Average of 3.5 congressional hearings annually per event; cluster (a).

[150] Horst Rittel and Melvin M. Webber, "Dilemmas in a General Theory of Planning," *Policy Sciences* 4, no. 1 (1973): 155–169.

2. Cluster (b)

The second cluster of issues includes larger domestic and international problems, including the Veteran's Affairs crisis and corporate scandals, ISIS, and Ebola. In this cluster are groupings of what Rittel termed "wicked problems."[151] Crises in this cluster are complex, but they typically do not effect individuals immediately (either financially or physically).[152]

3. Cluster (c)

The final cluster of problems is the extreme of extremes—Taleb's black swan events. These are the emerging problems that are very complex and cause significant and, more importantly, immediate impact to the greatest number. Cluster (c) is comprised of crises with high resource costs and broad impact, coupled with rapid emergence. Impacts are environmental (Deepwater Horizon and Exxon *Valdez*), emotional (Katrina and 9/11), or economic (arguably the 2008 economic crisis). Data shows that issues falling in the latter cluster (top 20 percent) described above emerged twice as quickly and averaged twice the number of congressional hearings annually as the remaining 80 percent. The distribution of data points indicate the fact not all issues garner the same amount of congressional attention and that issues of a certain type and complexity elicit a more urgent response.

The indication that not all crises are weighted equally and garner the same response is a promising finding in supporting the thesis that specific variables have distinct effects on the emergence of attention post-crisis. In the following chapter, each cluster are examined using statistical analysis to validate whether this hypothesis can be supported or whether it should be rejected as false. In Figure 8, there is a clear positive increase in the degree of attention as it emerges. An important question here is whether importance or congressional attention came first. This question has been addressed at several points in this thesis, particularly Chapter II on the emergence of environmental policies after the Santa Barbara oil spill and again in Chapter IV with issue-attention.

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[151] Ibid., 160.

[152] Average of 15.9 congressional hearings annually per event; cluster (b).

When examining attention by category rather than by crisis, in most all cases punctuated increases in attention could be attributed to a specific precipitating event. An example of emerging attention due to external forces might be the increase in attention to social security in the 1990s. By the early to mid-1990s, federal deficit and macroeconomics was identified by Gallup polling as one of the most important problems facing Americans.[153] In response to public opinion, in 1996, President Bill Clinton declared in a radio address to Americans a five-year plan to overhaul the social security system. Congressional attention to the issue increased directly as a result of the proclamation, as illustrated in Figure 9. In some cases, as discussed in Chapter IV, the ebb and flow of attention is due to the presidential election cycle as much as it is to actual or perceived need, such as occurs post-crisis. This dynamic of political ebb and flow is evident in the increases in 1976, 1980, 1984, and 1988 (Figure 9).

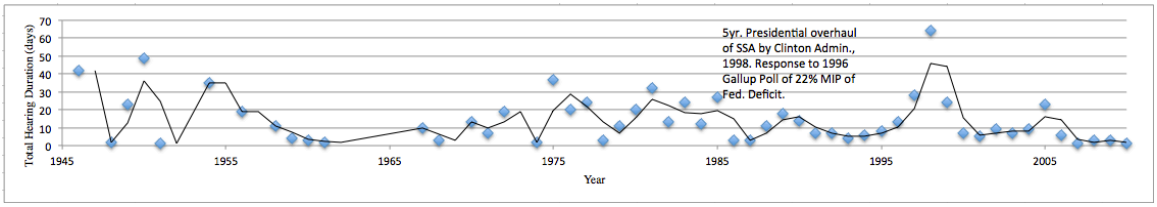

Figure 9. Congressional Hearings on Social Security, 1945–2010

In cases such as the above, the degree of attention does not appear to be influenced by the same characteristics governing crises. Rather, it appears public interest and political election cycles tend to more strongly influence these issues.

In Chapter V, qualitative values were derived for specific characteristics of crises and correlated to the rate of emergence of congressional attention post-crisis. Three distinct clusters of crises evident in the plotted data include black swans, wicked problems, and complex, longer-term social crises. With this information, the following chapters will conduct a more in-depth analysis, examining specifically at what rate

[153] Jeffrey M. Jones, "Budget Rises as Most Important Problem to Highest Since '96," Gallup, April 13, 2011, http://www.gallup.com/poll/147086/budget-rises-most-important-problem-highest.aspx

attention emerges, and how strongly the emergence correlates to the characteristics theorized by Gerston, Rochefort, and others

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VI. ANALYSIS OF CRISIS COMPARISON

> The idea that the future is unpredictable is undermined every day by the ease with which the past is explained.
>
> Daniel Kahneman[154]

A. CONGRESSIONAL ATTENTION

In 2011, late on a Sunday afternoon in May, a catastrophic F-5 tornado, which was part of a larger super cell of severe weather, ripped through the city of Joplin, Missouri. The tornado, which was part of a larger severe storm system, was nearly a mile wide when it touched down and lasted nearly 40 minutes. The massive tornado left a path of destruction 22 miles long, causing nearly $3 billion in damages, and resulting in 158 fatalities.[155] The Joplin tornado was the first F-5 tornado in Missouri since 1950.[156] The 2011 storm season ranks as one of the most intense; April 2011 had 753 tornados, the most active ever recorded. In total, 364 people lost their lives. The Natural Hazards Risk Reduction Act of 2011 was introduced in the late spring of 2011 but was killed in Congress shortly thereafter.[157]

One of the core underlying questions of this thesis is, "What do we pay attention to and why?" When crises occur, determining which crisis is most likely to cause significant reaction in issue-attention has far reaching implications, enabling decision-makers, and policy officials to prepare proposals for restructuring, mitigation, and preparedness in advance of the impending attention boon. Furthermore, officials with a more acute sense of when issues emerge and dissipate will likely be successful at

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[154] Daniel Kahneman and Ivan Tversky, *Thinking Fast and Slow* (New York: Farrar, Straus and Giroux, 2011), 218.

[155] "Missouri Department of Insurance Says Joplin Disaster Will be the Most Costly Insurance Payout in State History," *Live Insurance News*, July 27, 2011, http://tinyurl.com/ob75uv5.

[156] "F5 and EF5 Tornadoes of the United States 1950 to Present," Storm Prediction Center, March 15, 2015, http://www.spc.noaa.gov/faq/tornado/f5torns.html.

[157] "Natural Hazards Risk Reduction Act of 2011, S. 646, 112th Congress (2011–2012)," accessed March 3, 2015, https://www.govtrack.us/congress/bills/112/s646.

identifying funding and developing timely programs. The most obvious implications are to those of strategic communications post-crisis.

The following chapter provides an analysis of the dataset in Table 7 and the scatter plot in Figure 8 and draws conclusions based on the data. Additionally, a selection of crises will be examined by category, such as natural disasters. This will provide both the broader view of the crisis as it relates to other crises, as well as the crisis in relationship to other crises of its type.

In Chapter V (Figure 8), the mean rate of emergence of congressional attention for the entire sampling of 25 crises examined in this study was approximately 21 hearings per year over an average of 6.4 years. Crises that show the lowest rates of emergence in congressional attention include complex domestic and civil issues with low numbers of fatalities and economic impacts. Issues of this kind include childhood obesity (2.25 hearings per year); riots due to civil rights, such as the LA riots and Ferguson, Missouri (one hearing); and the AIDS epidemic in 1980s (7.5 hearings per year).[158] More complex issues having a broad impact across society (e.g., having potential to affect all citizens rather than a particular minority or special interest group) result in higher congressional attention, between 10 and 15 hearings annually, but indicate an extremely low emergence rate annually (≈0.4–2 respectively) because they are heard over a very long period. Examples include climate change (24 years) and immigration (64 years). The data revealed in this study reaffirms an observation by Rochefort and Cobb, who suggest "global warming is an illustration of an issue whose severity is debated with disputants vehemently disagreeing over its extent, timing, and impact."[159] Interestingly, as crises transform over time, so does attention. The fore mentioned—immigration and climate change—both adapted accordingly in congressional attention as the dynamics of the issues changed, caused by the influx of unaccompanied children across U.S. southern borders and the emerging scientific evidence supporting global warming. Unaccompanied children, due to an unprecedented increase in the number of children across the border,

[158] Riots in the 1960s caused congressional hearings to increase to a rate of approximately 3.4 annually over a period of five years, totaling 17 hearings. The Los Angeles riots after 1990 Rodney King decision did not result in congressional attention.

[159] Rochefort and Cobb, *The Politics of Problem Definition*, 17.

the amount of resources and money required to address the crisis, and the crisis' emergence rate, changed from merely an issue of immigration to a wicked problem. The change increased the number of hearings on the immigration by over 400 percent, from 10 hearings annually to nearly 60.

Global warming and climate change share a similar dynamic. Global warming, a subset of climate change, has increased in attention rapidly due to a sharp increase in global warming's rate of emergence and the resources required to mitigate the problem. These changes in the dynamics of the crisis have resulted in increased congressional attention by ≈56 percent, but more striking, the rate of emergence has increased from a mean of 1.9 hearings over 21 years to approximately 15 hearings over three years.

In the study of the accelerated emergence of attention over time, illustrated in Figure 10, the crises examined for this study fall out into three distinct groupings. The acceleration rates of a majority of emerging crises, as illustrated in Figure 10, fall within the range of zero to eight hearings per year on the scale of acceleration.

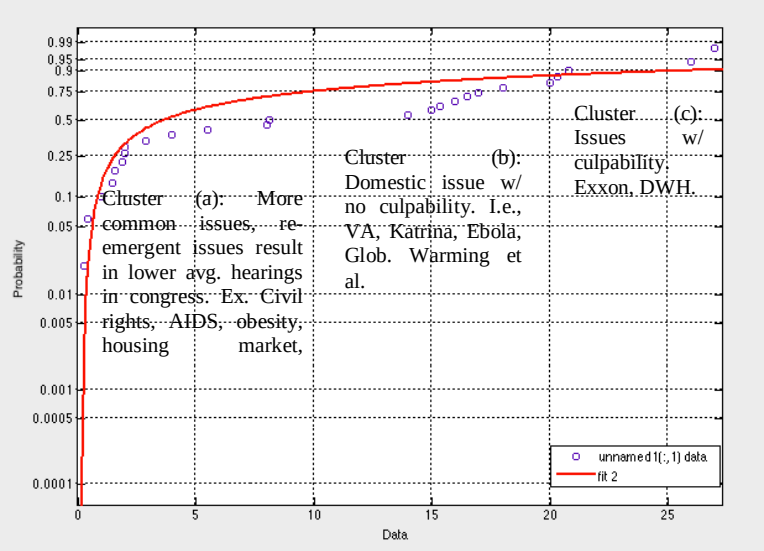

Figure 10. Rate of Acceleration of Congressional Hearings

A second distinct cluster of crises can be seen ranging from 14 to 22 hearings annually. These consist of black swans and wicked problems lacking culpability or a responsible party. This strongly suggests that crises where fault is a factor elicit attention

at a more frenetic pace than when culpability and blame are not factors. This observation later supported via statistical analysis. Finally, crises that have associated culpability make up the final 90th to 95th percentile. When combining data from Figure 8 and probability analysis cluster (a), represented by 50 percent of emerging crises, has mean "resource" value of ≈1.8. Each subsequent cluster grouping is at least 0.4 points higher in value than the previous cluster. This effect demonstrates that as a crisis becomes more resource intensive, its rate of emergence increases as a result.

A second probability analysis was conducted to examine the net value of crises noted in Figure 8 and Table 7. In terms of probability, crises that make up the 25th to 50th percentile include those having only tangential impact to the public, including among others, global warming, childhood obesity, and the Bosnian massacres in 1998. The more moderate issues include those that signal more rapid emergence due to higher intensity and greater resource impacts (the housing market crash; corporate scandal such as Enron and the AIG collapse, and on the higher end, Hurricane Katrina, Exxon *Valdez*, and Deepwater Horizon). The highest (least likely but highest amount of influence) include the financial collapse and September 11, 2001.

Probability analysis and data in Figure 8 provided a great deal of information as to the behavior of emerging crises and in some cases eluded to a relationship to Gerston and Rochefort's characteristics of crises. However, to support the stated hypotheses of this thesis, the combined relationship between characteristics and crises as well as each individual characteristic and each crisis would need to be evaluated. The examples above underscore that characteristics defining a crisis do indeed influence the degree of congressional attention a crisis will receive. As proposed in Chapter I of this thesis, there are five predictions made regarding the influence of characteristics on emerging attention, entailing five corresponding null hypothesis-alternative hypothesis pairings.

1. For the influence of combined characteristics on crises:

Null hypothesis (H_0): Specific characteristics, such as intensity, gestation, resources, size, and fault, when combined are not statistically significant contributors to the emergence of congressional attention post-crisis.

Hypothesis 1 (H_1): Specific characteristics, such as intensity, gestation, resources, size, and fault, when combined are contributors to the emergence of congressional attention post-crisis.

2. For the influence of characteristics on crises independently:

Null hypothesis (H_0): The characteristics' size, resources, and fault independently are not statistical significant contributors to the emergence of congressional attention post-crisis.

Hypothesis 2 (H_2): The characteristics' size, resources, and fault, independently are statistical significant contributors to the emergence of congressional attention.

3. For the influence of select characteristics on crises independently:

Null hypothesis (H_0): Characteristics, such as intensity, timing, and cause, measurably influence the emergence of congressional attention post-crisis when occurring independently.

Hypothesis 3 (H_3): Characteristics, such as intensity, timing, and cause, do not measurably influence the emergence of congressional attention post-crisis when occurring independently.

4. For the influence of characteristics on various categories of crises:

Null hypothesis (H_0): Specific characteristics, such as intensity, gestation, resources, size, and fault, when combined do not result in a statistically significant difference in emergent of attention during black swans and complex social crises, compared to crises such as wicked problems.

Hypothesis 4 (H_4): Specific characteristics, such as intensity, gestation, resources, size, and fault, when combined result in a statistically significant difference in emergent of attention during black swans and complex social crises, compared to crises such as wicked problems.

5. For the influence of economic impacts and fatalities on congressional attention:

Null hypothesis (H_0): Specific characteristic subsets of intensity such as number of fatalities and economic impacts cannot be correlated to an increase in the number of congressional hearings.

Hypothesis 5 (H_5): Specific characteristic subsets of intensity such as number of fatalities and economic impacts influence the number of congressional hearings post-crisis.

To test the fore mentioned hypotheses, two tests were used. The first test, the multivariate analysis of variance (MANOVA), tests whether one or more independent variables correlates to two or more dependent variables. The second test employed was the univariate analysis, which was used as a verification of findings. Both tests were conducted using IBM's SPSS® platform. All tests were conducted using a confidence level of 95 percent (significance level $\alpha = 0.05$) unless otherwise specified. During the F-test analysis using MANOVA, the Wilks's lambda (λ) and the associated F-ratio were sought. Lambda is a measure of the percent of variance in the dependent variable (D.V.) that is not explained by variances in the level of the independent variable (I.V.). Lambda adjusts between zero and one; the closer to zero the value, the less variance that is not explained by the I.V.

1. Hypothesis 1

Statistical analysis clearly upholds the first hypothesis, which predicted an influence of the combined characteristics on the congressional attention given to an emerging crisis. A one-way MANOVA revealed a highly significant multivariate main effect for the combined total characteristic value, revealing a Wilks's $\lambda = 0.001$, $F = 4.04$ (54, 9.75), $P < 0.01$. Thus, hypothesis 1 was confirmed and the null hypothesis rejected. This result alone is sufficient support for this thesis, that specific qualitative characteristics of crises, when quantified and combined, accurately describe the emergence of congressional attention post-crisis as posited by Gerston, Rochefort, and others.

2. Hypothesis 2

For the influence of characteristics on crises independently, 25 crises in total were evaluated, testing the null hypothesis, where each individual characteristic was treated as an independent variable, and total congressional hearings as the dependent variable. The results are included in Table 8. Results of the MANOVA indicate of the six characteristics, only three of the six demonstrated statistical significance, and only one of the four—*scope*—demonstrated high significance. *Cause* of the crisis appears to have the

least effect on congressional attention, according to MANOVA results. Thus, hypothesis 2 was confirmed and the null hypothesis rejected.

Table 8. MANOVA—Individual Characteristics of Crisis

Event Group	Description (α = 0.05 in all MANOVA	Result	Significance	H0
1. All 25 Crises	MANOVA—Compared T (total value) to congressional hearings, avg. rate of hearings, acceleration	Wilks's λ = 0.00 F= 4.04 (54/ 9.75) P = < 0.01	Highly Significant	Rejected
2. Ea. Value Independently	MANOVA—Scope (independent variable) v. congressional hearings (dependent variable)	Wilks's λ = 0.04 F= 14.4 (4/4) P = < 0.01	Highly Significant	Rejected
	MANOVA—Intensity (independent variable) v. congressional hearings (dependent variable)	Wilks's λ = 0.057 F= 3.17 (4/4) P = < 0.145	Not Significant	Not Rejected
	MANOVA—Timing (independent variable) v. congressional hearings (dependent variable)	Wilks's λ = 0.030 F= 4.77 (4/4) P = < 0.08	Not Significant	Not Rejected
	MANOVA—Resources (independent variable) v. congressional hearings (dependent variable)	Wilks's λ = 0.02 F= 6.03 (4/4) P = < 0.05	Significant	Rejected
	MANOVA—Fault (independent variable) v. congressional hearings (dependent variable)	Wilks's λ = 0.026 F= 37.36 (2/2) P = < 0.026	Significant	Rejected
	MANOVA—Cause (independent variable) v. congressional hearings (dependent variable)	Wilks's λ = 0.085 F= 2.43 (4/4) P = < 0.21	Not Significant	Not Rejected
Black Swans	ANOVA/Regression—Compared T (total value) to congressional hearings, avg. rate of hearings, acceleration	Wilks's λ = 0.00 F = 978.8 P = < 0.02	Significant	Rejected
Wicked Problems	MANOVA—Compared T (total value) to congressional hearings, avg. rate of hearings, acceleration	Wilks's λ = 0.005 F= 16.98 (11/ 1) P = < 0.187	Not Significant	Not Rejected
Complex Social Crises	MANOVA—Compared T (total value) to congressional hearings, avg. rate of hearings, acceleration	Wilks's λ = 0.54 F= 0.17 (5/1) P = < 0.941	Not Significant	Not Rejected

This finding clearly establishes that not all characteristics influence emerging crisis in the same manner, but rather that some are more significant than others. This finding also illustrates, when considered with the initial hypothesis of this study (H_1), that the combined effect of two or more crisis characteristics is more powerful than each characteristic individually. This is an interesting finding suggesting a compound effect caused by characteristics. This makes sense and helps explain why some crises seem to garner significant attention and others do not.

3. Hypothesis 3

For the influence of select characteristics on crises independently, namely *intensity* and *cause*, a one-way MANOVA was conducted whereby the two characteristics were tested separately (I.V.) against total congressional attention, average, and acceleration of hearings (D.V.), which resulted in a statistically insignificant response in both cases. The results of the MANOVA testing exceeded the confidence interval in both cases; therefore, hypothesis 3 was confirmed and the null hypothesis rejected. This finding confirms the findings of H_3, that neither *cause* nor *intensity* has a statistically significant influence on emerging attention post-crisis when considered independently of one another. Furthermore, it was discovered *timing* (i.e., how rapidly an event emerges) is also statistically insignificant as an independent characteristic.

4. Hypothesis 4

To attain a more exact measure of how different types of crises affect congressional hearings, the three clusters of events introduced in Chapter V were tested separately using MANOVA and univariate testing for each crisis type. Black swan events, those making up the top 20 percent of crises in the sample, when analyzed revealed interesting findings.

First, upon examining the influence of combined characteristics on black swans (top 20 percent of the total sample) when testing the null hypothesis, a one-way MANOVA revealed a statistically significant multivariate main effect for the combined total characteristic value of black swans, revealing a Wilks's $\lambda = 0.001$, $F = 978.9$ (3,1), $P < 0.02$. These findings were consistent with both the F-test and Pearson coefficient test for black swans. The findings revealed a significant correlation between the value of the crises' characteristics (I.V.) and the total number and average number of congressional hearings, and the rate of acceleration of attention (D.V). Results were just slightly lower than when included in the sample of all 25 crises. This demonstrated clearly not all crises correlate in the same manner. Interestingly, in the Pearson test, the relationship between the crisis value of black swans and the acceleration of issue-attention revealed a high but negative correlation. This is due to the fact that crises with the highest, most rapid

number of hearings also have the largest decline in hearings when compared to other black swans that may garner fewer hearings, thereby resulting in a smaller decline over a shorter period. These findings are consistent with the results of the MANOVA testing.

Wicked problems, the second cluster of crises, resulted in a Wilks's $\lambda = 0.005$, F-value = 16.98 (11/1), P = 0.19. Due to the statistical insignificant findings, a Pearson correlation test was conducted. The Pearson coefficient R-values were not as strong as those seen in the black swan test. The wicked problem demonstrates a moderate negative correlation, meaning as the crisis value of a wicked problem increases, the number of hearings decrease, as does the mean. These values are likely due to the issues of global warming and unaccompanied children. Both are significantly complex issues. Although the resources they currently require and their frequency are both low, the amount of attention they receive is very high because of their salience. What is interesting about these two issues is that they reside in two domains (i.e., they have shifted from one domain to another due to changing characteristic values). Take for example the issue of unaccompanied children. In 2014, 46,932 unaccompanied children were apprehended at the U.S. border, over twice the number from two years earlier and over four-times those apprehended in 2008.[160] As a result of the rapidly increased intensity of the issue, the short period over which the issue increased, and the dramatic increase in the amount of resources needed to combat the issue, the crisis itself changes in the attention it commands. In this example, the rate of acceleration of attention changed from .4 to 18.2 and the average rate of hearings from ten hearings annually to 58 annually.

Finally, the third cluster of crises, which tend to be localized or socially complex resulted in a low significance value, P = 0.941, when MANOVA testing was conducted. The analysis results indicate *scope* and *intensity* are most influential on the total number of hearings post-crisis. Generally, in the case of acceleration of the number of hearings in particular, the value was consistently deemed insignificant. This is likely due that complex crises are heard over long durations with little fluctuation, such as climate

[160] Jens Manuel Krogstad, Ana Gonzalez-Barrera, and Mark Hugo Lopez, "Children 12 and under Are Fastest Growing Group of Unaccompanied Minors at U.S. Border," Pew Research, July 22, 2014, http://www.pewresearch.org/fact-tank/2014/07/22/children-12-and-under-are-fastest-growing-group-of-unaccompanied-minors-at-u-s-border/.

change and immigration. Unlike the faster emerging sub-issues of global warming and unaccompanied children, which fall into the cluster of wicked problems, climate change and immigration are issues that have been heard over many years, compiling over 300 and 600 hearings respectively. When outliers are removed, confidence levels increase from less than 70 percent to 95 percent, making the findings statistically significant.[161] Findings suggest the more widespread and intense social issues become, the more they impact congressional hearings. This is a finding that makes absolute sense when considering the emergence of the civil rights movement of the 1950s. An interesting proof will be the reaction to Congress to civil disturbances and police tactics emerging as this is written. If the issue continues to spread and continues to increase in intensity, there should be, if this thesis is correct, an episodic rise in attention by Congress to approximately five hearings annually, followed by a gradual decline and period of stasis.

Data indicates the three clusters of crisis types, black swans, wicked problems, and complex social crises, are all influenced by the crises' characteristics differently. In the case of black swans and complex social crises, the results are statistically significant. Thus, hypothesis 4 was confirmed and the null hypothesis rejected.

5. Hypothesis 5

Specific *characteristic subsets of intensity such as number of fatalities and economic impacts cannot be correlated to an increase in the number of congressional hearings post-crisis.* Because of the relatively frequent, yet seemingly unpredictable nature of natural disasters and also the frequency in which these disasters result in legislative proposals, this study looked at these crises in particular. Analysis of variance (ANOVA) was conducted for 18 major natural disasters occurring from 1945 to 2012 to determine whether the null hypothesis was valid. The analysis comparing economic loss and fatalities (independent variable) to number of congressional hearings (dependent variable) revealed a highly significant relationship to economic loss at a confidence level of $P = 0.003$. As the implications of broad economic impacts increases during the disaster, the degree of attention increases. This finding is consistent with post-disaster

[161] P-value increase from $P = 0.292$ to $P = 0.043$.

models theorized by researchers at Massachusetts Institute of Technology, which suggests a cascading of impacts after an event.[162]

Univariate analysis revealed no significant relationship between fatalities and the number of congressional hearings.[163] However, when outliers were removed from the data set, the F-value of fatalities and congressional hearings corrected to F = 65.7, P = 0.097.[164] Likewise, if the outlier is removed for the linear regression test of economic impacts and fatalities (I.V.) and number of hearings (D.V.) for natural disasters, the fit is confirmed as highly significant by a result of R = 0.621, ANOVA F = 4.41 (2/95), P = 0.03. Findings indicate clearly that both economic impacts *and* fatalities influence the emergence of attention from Congress. Based on the above, hypothesis 5 was confirmed and the null hypothesis rejected.

B. NATURAL DISASTERS

The study on natural disasters is interesting because these events are seemingly random in their occurrences; yet, history portends future events. Major natural disasters, particularly those resulting in congressional attention, occur on average ≈5.4 years, based on historical data from 1945 to the present. Their frequency is somewhat predictable, falling naturally in an 80/20 distribution: 80 percent occurring within eight years of the previous, 20 percent within nine to 15 years.[165] These findings are based on the major crises that result in legislative change. When these crises do occur, the number of congressional hearings following the event is approximately 11 annually. The decline of attention is very rapid, occurring in nearly all cases within one year and declining on average 67 percent from the previous year. Hurricane Katrina, representing the rare extreme crisis, took four years to decline. In the fifth year after Katrina, congressional

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[162] Yossi Sheffi and James B. Rice, "A Supply Chain View of the Resilient Enterprise," *MIT Sloan Management Review* 47, no.1 (fall 2005): 42.

[163] T = 0.064, P = .950

[164] The outlier removed was Hurricane Katrina due to extreme reaction compared to all other natural disasters occurring over 70 years.

[165] Albert-László Barabási, *Linked: How Everything is Connected to Everything Else and What It Means for Business, Science, and Everyday Life* (New York: Plume, 2003), 72.

attention on natural disasters was still higher than it had been at any point in the previous 62 years.[166]

Data was extracted from the Library of Congress from 1945 to 2012 on hearings relating to natural disasters, reviewing 564 hearing in total. Data was sorted by event name and event type as described in Chapter V.

Dr. Thomas Birkland would be inclined to disagree that a catastrophe with no impact matters. However, each catastrophe contributes to the historical record of events and helps create the basis for future predictions of event likelihood. Therefore, it may be more likely every event matters. Punctuations in congressional attention resulting from natural disasters typically result in legislation of some form. In approximately 86 percent of the surges in attention from 1945 to 2012, legislation was passed commensurate with the crisis that preceded it—greater than eight in 10 occurrences.

The plot in Figure 11 shows the number of congressional hearings per year from 1945 to 2010.

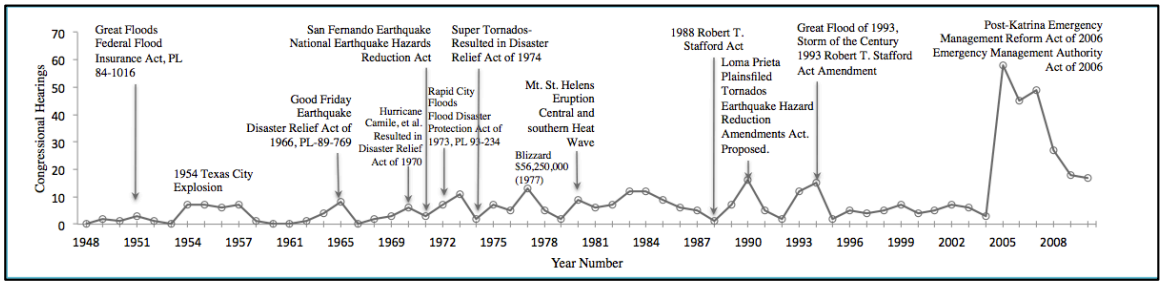

Figure 11. Natural Disasters, 1945–2012

Surges in congressional hearings are caused by a variety of events, from the Texas City explosion in 1954 to hurricanes and earthquakes. Occasionally floods and tornados cause an interest, but the reaction to more localized events appears to be slight. As shown in Figure 11, an increase in hearings on natural disasters occurs approximately every eight to 10 years, the highest emergence being after Hurricanes Katrina and Rita. The

[166] This finding is extrapolated from data compiled from 1945 to 2010. Data compiled from University of Texas Austin.

next highest emergence was in 1990 after the Loma Prieta earthquake, followed by Hurricane Hugo, and the Plainfield tornado (29 fatalities, 353 injuries, $165M).[167]

Most natural disasters are minor relative to the black swan, which garners substantial attention. The average number of hearings annually, dating back to 1942, when major natural disasters occur is between five and six with no more than 16 for a single occurrence. Black swans easily exceed 55 hearings. The question is, can we "predict" or anticipate the black swan events, and thus predict or anticipate congressional attention and legislative opportunity? From the data compiled in this thesis and based on the analysis and observations of this chapter, I would argue yes. Perhaps we still cannot predict where, but we can certainly make informed observations about when, and how impactful the event might prove to be.

C. WHAT DOES THE DATA COMMUNICATE?

Data clearly demonstrates variances in the value of emerging crises consistent with the number of congressional hearings heard on various crises and exhibits a statistically significant correlation between the value of specific clusters of crises and consequent emergent attention. From the data compiled in this thesis, the analysis indicates:

1. Specific characteristics of crises, such as intensity, gestation, resources, size, and fault, do influence the emergence of congressional attention post-crisis.
2. Results indicate of the six characteristics of crises, only three of the six demonstrated statistical significance. Only one of the four—*scope*—demonstrated high significance.
3. *Cause* and *intensity* of the crisis have the least effect on congressional attention when evaluated independently of other characteristics.
4. Crises classified as black swans more strongly influence emergence and total value of attention than more prolonged and complex crises, such as immigration and civil rights.

[167] Gregg Greenough et al., "The Potential Impacts of Climate Variability and Change on Health Impacts of Extreme Weather Events in the United States," *Environmental Health Perspectives* 109, no.2 (2001):191–198, http://depts.washington.edu/envir202/Readings/Reading04.pdf.

5. Congressional attention after natural disasters more strongly correlates to the degree of economic impact but is also related to the number of fatalities caused by the occurrence.
6. There is an 80 percent probability of a natural disaster occurring within 3.6 years of the previous event that result in legislative change.
7. After natural disasters, only in very rare cases does punctuated attention last more than two years before returning to pre-crisis levels.

These findings are consistent with Dr. Bryan Jones and Frank Baumgartner's thesis. In their work on problem emergence they note:

> Because different factors may come into play at different times, there may not be any simple relationship between indicators and policy action. The threshold for action…may change over time as the nature of the problem and the desirability of government action is debated.[168]

They further cite the inherent complexity and implausibility of determining causality merely by examining the interactions among variables, noting, "More accurately, one comes to recognize the contingent and interactive nature of causality."[169] However, the strong correlation between the characteristics of a crisis and policy responses of government, as illustrated repeatedly throughout this thesis, suggest congressional attention is episodic and reactive. This is consistent with Gould's theory of punctuated equilibrium.[170] Of public policy, it has been posited, "it is stasis interrupted by bursts of innovation."[171]

[168] Baumgartner and Jones, *Agendas and Instability*, 90.

[169] Ibid., 91.

[170] Gould, *Punctuated Equilibrium*. 41.

[171] Jones and Baumgartner, *The Politics of Attention*, 20.

VII. CONCLUSIONS

Absence of evidence is not evidence of absence.

Dr. Carl Sagan[172]

A. HYPOTHESIS

This study began by posing the following supposition: *There are specific variables that enable and accelerate the emergence of attention post-crisis and give an issue the power to compel change in public and political opinion. The hypotheses driving this inquiry will endeavor to demonstrate through a repeatable model a pattern in emerging crises of specific forces that some more strongly influence emerging problems than others. Research will deduce there are specific combinations of forces more likely to result or influence emergent issues than others.*

This hypothesis was further expanded into five additional hypotheses to demonstrate the interrelationship of characteristics of crises on issue-attention and emergence of congressional attention—what Kingdon terms the policy window. This method proposed to develop a numerical value-scale and to assign quantitative values in place of typical qualitative descriptors of crises.[173] As described in Chapter VI, univariate and multivariate statistical analysis was conducted to demonstrate statistically significant relationships between the assigned characteristics of crises and the emergence of congressional attention. Findings of the analysis indicated with a high degree of confidence the relationship between the proposed characteristics, both the total emergence of congressional attention, and also the rate of emergence. Based on evidence, there now remains no question variables such as the size of an event, the intensity and rate of emergence, the resources it requires, and the cause and culpability all contribute to

[172] Carl Sagan, *The Demon-Haunted World: Science as a Candle in the Dark* (New York: Ballantine, 1997). 213.

[173] Selected crises were valuated using the following model proposed in Chapter I: *T= m*A, where m = f(scope, intensity, time, resources, fault, cause), and A = (Vf-Vi)/time; Vf = n of hearings at initial emergence, Vf = n of hearings at height.*

the emergence of the issue-attention cycle and subsequently the policy window post-crisis.

B. METHODOLOGY

The study set out to demonstrate the truth of the hypothesis with a brief synopsis of the contemporary theories of political science and problem emergence, followed by a clear outline of these theories applied to the emergence of U.S. environmental policy. The predominant theories included incrementalism, social identity theory, triggering events, the issue-attention cycle, punctuated equilibrium, and the policy window.

Next, this study examined in greater detail several of the more influential theories to the emergence of attention post-crisis, noted above. Theories, such as punctuation in government, the issue-attention cycle, and social identity theory, as demonstrated in Chapters II, III, and IV, underpin how crises are framed, how, and when attention emerges during and after crisis as well as the subsequent decline of attention paid to crises and their causes. The advance-decline indicator, a financial market predictive indicator, was tested for this thesis. It was developed and fitted to congressional hearings over time but was found to be impractical as a predictive tool of attention. However, the advance-decline indicator was beneficial when applied to congressional attention to discern patterns in attention to crisis. Its application to dissimilar crisis types demonstrated similar arrangements, principally each period of increased attention post-crisis appears to last approximately three years before declining. Periods of significant punctuation (e.g., after Hurricane Katrina) are followed by approximately a five-year period of declination before normalizing. This validates the theory of punctuated equilibrium and incrementalism, as seen in periods of stasis in congressional attention, resting between heightened emergence of attention and subsequent legislation.

The issue-attention cycle, the process by which crisis attention emerges and declines, reveals patterns in emergence and decline of public opinion that is repeatable across crisis types. As shown in Chapter IV, public attention concerning the war on terrorism and the war on drugs cycled in a near perfectly matching manner (refer to Figure 6). This is an unexpected pattern that appears repeatedly in episodic attention and

is seen in natural disasters, terrorism, civil unrest, and is identifiable at both macro (national) and micro (regional) levels. Patterns in social media relating to crisis indicate the same decline in attention to those above.[174] When quantified into percentages, the decline tends to be on average 67 percent.[175] It is reasonable to conclude issue-attention may initiate, function, and complete its cycle consistent with such theories as diffusion of innovation and decay theory. Although outside the specific focus of this thesis, there appears to be a naturally occurring pattern of attention in emergence and decline across crisis types, communication modes, and regardless of the size of geographic impact. This is a significant discovery worthy of further academic exploration as it has potential to elucidate not only when and to what degree, but why powerful issues decline from attention.

Once established that congressional attention is indeed influenced by crises as they emerge, and the fact that not all crises warrant the same degree of attention, Chapters V and VI set out to successfully support the hypothesis questioning the characteristics of crises and their influence on subsequent attention. The problem of emerging attention was examined by applying Gerston's qualitative characteristics, combined with other similar qualities, to a sample of 25 crises quantitatively. All 25 crises were evaluated and analyzed, determining for each crisis the mathematical mean of congressional attention annually over its entire duration, how rapidly attention emerged, and the total number of hearings. This data was then compared against the assigned numerical value of the characteristics of each crisis.

C. OUTCOME OF ANALYSIS

1. When all crises in the sample were compared against their rate of emergence in a scatter plot, the 25 crises grouped into three distinct clusters: black swans, wicked problems, and social crises. The highest value cluster representing the top 20 percent of all crises in the sample.

[174] Data is based on analysis of Tweets (#Ferguson) from August 9 to August 15, looking specifically at the night of August 13 through 15. Rather than percentage of a whole as was the measure in Figure 3, Tweets were measured in tweets per minute from 11:41pm, August 13 to 5:44am, August 15.

[175] Reference Figure 12.

2. As the characteristics of a crisis develop over time in their value (e.g., their intensity, the resource impacts), the degree of attention changes as in the case of immigration transitioning to a wicked problem, consequently increasing its degree of attention by over 400 percent, from approximately 10 hearings annually to nearly 60 hearings annually. This alone validates the primary hypothesis of this thesis in that as the value of a crisis changes, so does the congressional attention.

3. Hypothesis: H_0 (null) = Specific characteristics, such as intensity, gestation, resources, size, and fault, do not have any influence on the emergence of congressional attention post-crisis. For the entire sampling of crises in this study, the null hypothesis was rejected; results were confirmed conducting an F-test with a 99 percent level of significance.[176] Therefore, it is conclusive there is a high statistical significance in findings between the characteristic values of crises and the emergence of attention. Secondary confirmation testing validated this result.

4. Validation testing for black swans revealed a statistically significant correlation between the value of the crises' characteristics, the total number, average number of congressional hearings, and the rate of acceleration of attention—rejecting the null hypothesis for H_2.

5. Correlation and significance were meaningfully higher than when included in the sample of all crises. This fact indicates clearly not all crises correlate in the same manner.

6. MANOVA results indicate characteristics of crises affect black swans, wicked problems, and social crises each differently.

7. The characteristics of intensity and cause alone are not as influential on emerging crises as other characteristics.

8. Analysis indicates wicked problems are generally less affected by characteristics than social crises and black swans.

9. A one way ANOVA indicates outliers have significant effects on the analysis of wicked problems and social crises. When outliers are removed, statistical results become far more significant in these categories. The F-test for social crises strongly rejects the null hypothesis. Notwithstanding, the Pearson correlation demonstrates a moderate correlation between crisis value and attention as well as a statistically insignificant correlation between a crisis' characteristics and acceleration. This is likely due to outliers such as climate change and immigration.

10. There is relationship of high statistical significance between economic loss and natural disasters. Likewise, there is a statistically significant relationship, though to a slightly lesser degree, of fatalities to natural disasters. However, as noted in the analysis of all crises above, the

[176] Reference Chapter VI.

intensity (degree of economic impact and fatalities) alone does not affect the crisis as strongly as when accompanied by other factors.

11. Eight in 10 major natural disasters occur within eight years of a previous event, with only 20 percent of major natural disasters occurring greater than nine years from the previous. Of these occurrences, there is a high probability a major natural disaster resulting in significant congressional attention will occur at least once every 5.4 years. It is likely the number of hearings will total near 11, depending on the damage and number of fatalities among other factors.

12. Each disaster attention-cycle lasts approximately two to three years. In nearly all cases, the decline in attention from its highest point will be ≈67 percent from the previous year.

Figure 12 illustrates the general construct of crises based on the findings of this thesis. The illustration is an approximation; it is based on the averages of the various types of crises studied in previous chapters. Although the decline and secondary emergence of attention does not occur in all cases, it occurs frequently enough and in the same manner and proportions that it is worth noting here.

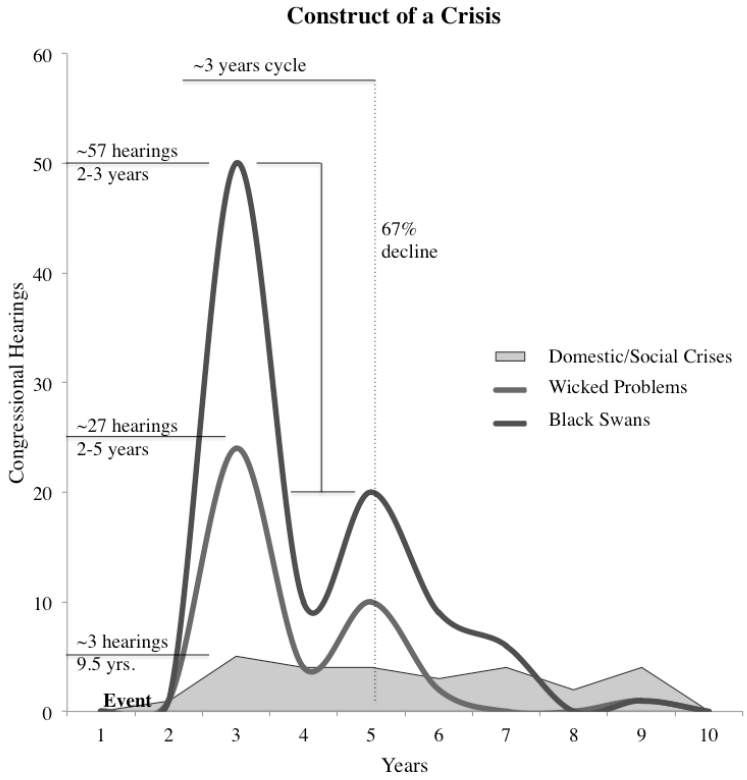

Figure 12. Construction of Crisis Attention, Created May 8, 2015

D. IMPLICATIONS OF THESIS ON HOMELAND SECURITY

Uncertainty is an uncomfortable position, but certainty is an absurd one.

Voltaire

This study has established that there is a relatively predictable cycle to political attention, which is generated, in many cases, by the characteristics and reactions to crises. The Department of Homeland Security is recent evidence of this reaction, similar to the New Deal in the 1930s, growth in defense after World War I and II, and the U.S. environmental programs of the 1960s. However, as Newton's third law states, "to every action there is always opposed an equal reaction."[177] Public opinion has sharply faded on homeland security, particularly terrorism. The nation's intense focus on post-9/11 protection has been replaced by images of natural disasters, creating a change in focus to emergency management, preparation, and resilience. This decline may be the recognizable manifestation of Downs's issue-attention cycle applied to homeland security. Once salient issues reach their dramatic climax, they become susceptible to being displaced from public attention (and the political agenda) by other newer dramas as they emerge—those of which we have more fully defined within the body of this study.

This decline presents the larger challenge. A changing political landscape means potentially shifting priorities—these priorities are shifting to a new frontier of the war on terrorism as this is written. Cyber security has increased in prominence over recent years. The beginnings of a shift are occurring in cyber, a newly emerging field within homeland security marked by the creation of the Cyber Threat Intelligence Integration Center. The Federal Information Security Management Agency, established in 2002 increased its already growing budget by 100 percent from 2009 to 2010 following Executive Order 13636 and *Presidential Policy Directive 21*.[178] Over the next three years, the agency's budget continued to increase by $1.3B annually.[179] With an event meeting our

[177] Isaac Newton, *Philosophiae Naturalis Principia Mathematica* (London: Reg. Soc. Press, 1686), 16. https://www.gutenberg.org/files/28233/28233-pdf.pdf.

[178] Eli Dourado, "Federal Cybersecurity Breaches Mount Despite Increased Spending," George Mason University, Mercatus Center, January 20, 2015, http://mercatus.org/publication/federal-cybersecurity-breaches-mount-despite-increased-spending.

[179] Ibid.

requirements of the characteristics of a crisis,[180] cyber will arguably represent the next punctuated growth in homeland security; however, like other issues cyber will likely wane in several years as new priorities emerge to displace it.

In defining the patterns of episodic attention and political opportunity in crisis, there is an underlying ethical risk present. Significant crises often necessitate the re-examination, re-assessment, and, in some cases, re-structuring of the status quo political arrangements. An acute understanding of the transfer of attention and punctuated shifts of policy can better enable the astute, savvy politician to influence the attention cycle for gain, or it may likely present opportunity to not *invest* where it may not appear to be lucrative to do so for the long term (i.e., there is no potential for growth or long-term political opportunity). Examples might include childhood obesity, civil rights, and social security reform. Issues of this kind, because of their lack of salience and power, are not likely to garner interest unless politically advantageous.[181] It is generally accepted one cannot go *against* public opinion and expect to stay in democratic politics for long. It has been attributed to President Woodrow Wilson, a career statesman, who said the public sentiment is like the wind used by a sailing ship. The sailor can use it to power a voyage but cannot sail against it. Therefore, there is a risk created through this study that one might be more advantaged to align oneself with the emerging crisis likely to be most salient and repudiate those that are not.

The more concise defining of reactive congressional attention enables anticipatory governance and thus limits reactive governance post-crisis. This key benefit of theoretical advancement establishes a control-measure in the current process of political agenda development as it pertains to the generation and acceptance of policy alternatives. Currently, political opportunism caused by reactive attention of Congress typically results in fertile opportunities for policy supporters to champion preferred solutions or attention to particular issues.[182] It also provides opportunity for key political figures to initiate

[180] An event of this nature may be similar to the OPM data breach in June 2015, which compromised the personal data of nearly 4.2 million Americans.

[181] Emily Sherman, "Candidates Ignoring Coming Social Security Crisis, Critics Say," *CNN*, October 23, 2008, http://www.cnn.com/2008/POLITICS/10/23/social.security/index.html?iref=24hours.

[182] Kingdon, *Agendas, Alternatives, and Public Policies*, 99.

punctuated growth of government. This feature of reactive governance is precisely what the theory of anticipatory governance is designed to prevent. Advocates of particular policy solutions know that when the policy window is open, it is open only for a short time.[183] They also know the policy window is the sine qua non of money; where there is money, there is potential for shifts or shoring up of power. There is a conflict dynamic within the political reform craft by those within the elite intent on conservative reforms to protect status quo, and those intent on more liberal reform of institutional arrangements. Changes in policy goals, institutions, and polity settings influence revenue flow, thus influencing power distribution.[184]

The future spectrum and landscape of homeland security and protection against terrorism, the cornerstone of the Department of Homeland Security, represents the terrae incognitae—the land of the unknown. Investing in the protection against unknown and unknowable threats provides a real challenge to homeland security professionals in articulating policy change from equilibrium. Dr. Adam Sheingate terms these investments "speculative acts of creativity."[185] These forced changes influence organizational structures, relationships and behaviors arguably for decades after the initiating event, acting as catalysts or, as Sabatier notes, "significant perturbations."[186] Homeland security professionals should become astute at understanding threats, measuring generally their often opaque environs, and most importantly articulating the value of investment in risk mitigation through resilience.

To this end, this thesis establishes a pattern in emerging attention post-crisis with which legislators and agency officials can anticipate the emergence of the policy window. Crises with higher quantitative values elicit markedly higher degrees of congressional attention. For example, crises with high values in three of four characteristics will result

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[183] Ibid., 165–169.

[184] Bruce Bueno de Mesquita and Alastair Smith, *The Dictator's Handbook: Why Bad Behavior is Almost Always Good Politics* (New York: Public Affairs, 2011), 19. See also Boin, *The Politics of Crisis Management*, 122–123.

[185] Adam D. Sheingate, "Political Entrepreneurship, Institutional Change, and American Political Development," *Studies in American Political Development* 17, no. 2 (2003): 185–203.

[186] Anthony Bertelli and Peter John, *Public Policy Investment: Priority-Setting and Conditional Representation in British Statecraft* (Oxford: Oxford University Press, 2013), 22.

in nearly 50 percent more hearings annually than crises with characteristics totaling a lesser value.[187] Furthermore, the research presented has made clearer the subject of issue-attention. Through analysis, this study has validated findings that groupings of crises such as black swans, wicked problems, and socially complex and domestic crises result in varying degrees of congressional attention. Quantitative data on social and domestic/ regional crises indicate, for instance, the attention to these categories of crises lasts twice as long as wicked problems and black swans, yet is approximately 10 percent the number annually, with the median number of hearings each year between one and 15.

This thesis has established a foundation to better understand the scope and duration of attention post-crisis. This understanding enables efforts to develop a model to support anticipatory governance of catastrophic events. Based on the data analysis in this study, it is clear events will continue to occur with regularity and that events are somewhat predictable in their scope and scale, as is legislative reaction to such crises. Using statistical analysis and probability models may help to clarify emergent crises or at least better define the problem space and second order effects of a catastrophe. In addition, they may help mitigate reactive governance that tends to occur as a result of emerging crises. This is an area continually deserving of more scholarly attention. The subject covered in this study is merely a foundation, yet it has shown the depths to which this subject can be mined.

There are several areas regarding issue-attention that should be considered for further study. The duration of the issue-attention cycle and whether prolonged heightened awareness creates a proportionate increase in negative sentiment. Understanding the issue-attention cycle and its consequences will more fully aid emergency managers, response professionals, and presidential staff in preparing both short- and long-term risk management messaging and strategies. Strategic communications of this nature may be that which is communicated post-crisis intentionally to appropriately frame narratives of local and state officials, the public, and media.

[187] Crises ranked high in three of four characteristics, totaling a value of 2.7, result in 49 percent more hearings than those less than 2.7.

Defining the emergence, timing, and duration of the issue-attention cycle to more accurately predict the policy window. Although contemporary research does examine what contributes to the emergence of issues, quantifying the timing and duration of issue-attention may prove a far more challenging task.[188] Additional study should be undertaken to determine the re-emergence of the policy window without a triggering event. This dynamic is seen after most major crises, as noted in Figure 12, and relates to congressional attention as well as social media attention and public opinion polling.

By accepting new theories on legislative attention resulting from problem emergence, especially theories that better establish what causes, shapes, and retains episodic attention, institutions will be challenged to react more predictably. The competing narratives in this effort will be those that suggest history cannot foretell anything about future events, nor can the reaction to previous unpredictable events portend anything about future behavior. This is erroneous, myopic thinking. Evidence reinforces, with a high degree of statistical significance, certain crises correlate strongly to specific reactions in legislature. As posited by Dr. Dana Meadows, thinking in terms of a systems structure is key to defining otherwise chaotic systems. She explains, "System structure is the source of system behavior. System behavior reveals itself as a series of events over time."[189] Her thesis suggests chaotic problems become less surprising when accumulated instances can be distilled into dynamic patterns of behavior.[190] This is precisely what we have accomplished in this study. Event-event analysis (e.g., that one event correlates to another) reveals nothing of the *why* the system behaves in the manner it does. The core of this thesis on episodic attention seeks not only to define the roots of episodic attention post-crisis but also define the "system" behind the event. The chaotic event is not the sum of its parts:

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[188] This conclusion is based on the fact that issue-attention is human-based and therefore is inexact.

[189] Donella H. Meadows and Diana Wright, *Thinking in Systems: A Primer* (White River Junction, VT: Chelsea Green Pub., 2008), 80.

[190] Ibid., 88.

> A whole, which is *more* than the sum of its parts, has something internal, some inwardness of structure and function, some specific inner relations, some internality of character of nature which constitutes that *more.*[191]

Rather, there is much more to the crisis than what is immediately evident. As Meadows eloquently suggests, history reveals a great deal about the potential of future events and can serve to greatly reduce the degree of irrationality and uncertainty that the events of the terra incognita imbue. Employing systems models as theorized by Dr. Meadows, future research can define new theoretical models of episodic attention in Congress, examining the how powerful coalitions affect the dynamics of issue-attention and political opportunism.

By having a more acute sense of the reaction of governance of particular emerging crises, one can better prepare messaging and the general construct of political agenda setting. More importantly, the more precise understanding of emerging problems aids in more completely defining the landscape of complex crises, thereby lessening the need for reactive governance. Rather, it allows for a more measured and proactive post-crisis response. What would this look like in practice? Anticipatory governance goes to the theory of nineteenth century scholar of the English Constitution, Walter Bagehot. His theory of double government speaks to a bifurcated nature of governing. In double government, this is the division between the Madisonian governance (reactive congressional decision making resulting from emergent attention post-crisis), and Trumanism (departmental decision-making and programmatic development that is measured and guides legislative decision-making). The latter prevents reactive governing, which ultimately leads to anemic single-faceted regimes like the post-9/11 Department of Homeland Security.

A better understanding of the economy of crisis, the probability, and the risks posed by a crisis to a community better allows for arguments of return on investment and intentional strategic messaging. By building a comprehensive landscape of a variety of dissimilar crises, one can see the patterns of attention emergence, calculate probability of occurrence and size of events, and develop programs that represent “over the horizon”

[191] Jan Christian Smuts, *Holism and Evolution* (London: MacMillan and Co., 1926), 103.

preparedness and mitigation activities by investing in the necessary resilience needed to combat the ill effects of crisis. When the behavioral aspects of issue-attention post-crisis are known to decision makers, it should be more evident that an initiating event should not be needed to pressure change. This changes the requirements of Kingdon's tenants; maybe even changes the notion of a policy window. The merit of this research transcends the organizational or political future of a single entity or specific stakeholder. Ideally, this work will provide a completely different lens through which to look at the dynamic of emerging crises and episodic attention, providing an opportunity to see things, understand them, and then react differently.

APPENDIX. STATISTICAL ANALYSIS RESULTS

RESULT DETAILS & CALCULATION FOR CRISIS VALUE V. ACCELERATION (ALL 25 CRISES)

X Values
$\sum = 770$
Mean = 30.8
$\sum(X - Mx)2 = SSx = 7916$

Y Values
$\sum = 632$
Mean = 25.28
$\sum(Y - My)2 = SSy = 16505.04$

X and Y Combined
N = 25
$\sum(X - Mx)(Y - My) = 7736.4$

R Calculation
$r = \sum((X - My)(Y - Mx)) / \sqrt{((SSx)(SSy))}$

$r = 7736.4 / \sqrt{((7916)(16505.04))} = 0.6768$

Meta Numerics (cross-check)
r = 0.6768

RESULT DETAILS & CALCULATION FOR CRISIS VALUE V. AVERAGE (BLACK SWANS)

Result Details & Calculation

X Values
$\sum = 280$
Mean = 56
$\sum(X - Mx)2 = SSx = 1416$

Y Values
$\sum = 279$
Mean = 55.8
$\sum(Y - My)2 = SSy = 5610.8$

X and Y Combined
N = 5
$\sum(X - Mx)(Y - My) = 2570$

R Calculation
$r = \sum((X - My)(Y - Mx)) / \sqrt{((SSx)(SSy))}$

$r = 2570 / \sqrt{((1416)(5610.8))} = 0.9118$

Meta Numerics (cross-check)
r = 0.9118

RESULT DETAILS & CALCULATION FOR BLACK SWANS, CRISIS VALUE V. TOTAL HEARINGS

X Values
$\sum = 280$
Mean = 56
$\sum(X - Mx)2 = SSx = 1416$

Y Values
$\sum = 601$
Mean = 120.2
$\sum(Y - My)2 = SSy = 36720.8$

X and Y Combined
N = 5
$\sum(X - Mx)(Y - My) = 6184$

R Calculation
$r = \sum((X - My)(Y - Mx)) / \sqrt{((SSx)(SSy))}$

$r = 6184 / \sqrt{((1416)(36720.8))} = 0.8576$

Meta Numerics (cross-check)

r = 0.8576

RESULT DETAILS & CALCULATION FOR CRISIS VALUE V. ACCELERATION (BLACK SWANS)

Result Details & Calculation

X Values
∑ = 280
Mean = 56
∑(X - Mx)2 = SSx = 1416

Y Values
∑ = 119.667
Mean = 23.933
∑(Y - My)2 = SSy = 37.2

X and Y Combined
N = 5
∑(X - Mx)(Y - My) = -177.333

R Calculation
r = ∑((X - My)(Y - Mx)) / √((SSx)(SSy))

r = -177.333 / √((1416)(37.2)) = -0.7727

Meta Numerics (cross-check)
r = -0.7727

RESULT DETAILS & CALCULATION FOR CRISIS VALUE V. TOTAL (WICKED PROBLEMS)

Result Details & Calculation

X Values
∑ = 213
Mean = 30.429
∑(X - Mx)2 = SSx = 235.714

Y Values
∑ = 596
Mean = 85.143
∑(Y - My)2 = SSy = 69084.857

X and Y Combined
N = 7
∑(X - Mx)(Y - My) = -1556.429

R Calculation
r = ∑((X - My)(Y - Mx)) / √((SSx)(SSy))

r = -1556.429 / √((235.714)(69084.857)) = -0.3857

Meta Numerics (cross-check)
r = -0.3857

RESULT DETAILS & CALCULATION FOR CRISIS VALUE V. ACCELERATION (WICKED PROBLEMS)

X Values
∑ = 213
Mean = 30.429
∑(X - Mx)2 = SSx = 235.714

Y Values
∑ = 123.367
Mean = 17.624
∑(Y - My)2 = SSy = 173.744

X and Y Combined
N = 7
∑(X - Mx)(Y - My) = -52.938

R Calculation
r = ∑((X - My)(Y - Mx)) / √((SSx)(SSy))

r = -52.938 / √((235.714)(173.744)) = -0.2616

Meta Numerics (cross-check)
r = -0.2616

RESULT DETAILS &
CALCULATION FOR CRISIS VALUE
V. AVERAGE (WICKED PROBLEMS)

X Values
∑ = 213
Mean = 30.429
∑(X - Mx)2 = SSx = 235.714

Y Values
∑ = 224.733
Mean = 32.105
∑(Y - My)2 = SSy = 2216.328

X and Y Combined
N = 7
∑(X - Mx)(Y - My) = -295.448

R Calculation
r = ∑((X - My)(Y - Mx)) /
√((SSx)(SSy))

r = -295.448 / √((235.714)(2216.328)) =
-0.4088

Meta Numerics (cross-check)
r = -0.4088

RESULT DETAILS &
CALCULATION FOR CRISIS VALUE
V. TOTAL (DOMESTIC & SOCIAL
PROBLEMS)

X Values
∑ = 277
Mean = 21.308
∑(X - Mx)2 = SSx = 1916.769

Y Values
∑ = 1393
Mean = 107.154
∑(Y - My)2 = SSy = 460135.692

X and Y Combined
N = 13
∑(X - Mx)(Y - My) = -14134.615

R Calculation
r = ∑((X - My)(Y - Mx)) /
√((SSx)(SSy))

r = -14134.615 /
√((1916.769)(460135.692)) = -0.4759

Meta Numerics (cross-check)
r = -0.4759

RESULT DETAILS &
CALCULATION FOR CRISIS VALUE
V. AVERAGE (DOMESTIC &
SOCIAL PROBLEMS)

X Values
∑ = 277
Mean = 21.308
∑(X - Mx)2 = SSx = 1916.769

Y Values
∑ = 127.777
Mean = 9.829
∑(Y - My)2 = SSy = 665.354

X and Y Combined
N = 13
∑(X - Mx)(Y - My) = -244.504

R Calculation
r = ∑((X - My)(Y - Mx)) /
√((SSx)(SSy))

r = -244.504 / √((1916.769)(665.354)) =
-0.2165

Meta Numerics (cross-check)
r = -0.2165

RESULT DETAILS & CALCULATION FOR CRISIS VALUE V. ACCELERATION (DOMESTIC & SOCIAL PROBLEMS)

X Values
∑ = 277
Mean = 21.308
∑(X - Mx)2 = SSx = 1916.769

Y Values
∑ = 54.179
Mean = 4.168
∑(Y - My)2 = SSy = 261.691

X and Y Combined
N = 13
∑(X - Mx)(Y - My) = -52.927

R Calculation
r = ∑((X - My)(Y - Mx)) / √((SSx)(SSy))

r = -52.927 / √((1916.769)(261.691)) = -0.0747

Meta Numerics (cross-check)
r = -0.0747

NAT. DISASTERS W/OUT KATRINA- RESULT DETAILS & CALCULATION- ECONOMIC V. HEARINGS

X Values
∑ = 234.7
Mean = 13.806
∑(X - Mx)2 = SSx = 4790.649

Y Values
∑ = 73
Mean = 4.294
∑(Y - My)2 = SSy = 493.529

X and Y Combined
N = 17
∑(X - Mx)(Y - My) = 955.471

R Calculation
r = ∑((X - My)(Y - Mx)) / √((SSx)(SSy))

r = 955.471 / √((4790.649)(493.529)) = 0.6214

Meta Numerics (cross-check)
r = 0.6214

NAT. DISASTERS, W/ KATRINA, RESULT DETAILS & CALCULATION- ECONOMIC V. HEARINGS

X Values
∑ = 318.7
Mean = 17.706
∑(X - Mx)2 = SSx = 9444.129

Y Values
∑ = 220
Mean = 12.222
∑(Y - My)2 = SSy = 19727.111

X and Y Combined
N = 18
∑(X - Mx)(Y - My) = 10416.078

R Calculation
r = ∑((X - My)(Y - Mx)) / √((SSx)(SSy))

r = 10416.078 / √((9444.129)(19727.111)) = 0.7631

Meta Numerics (cross-check)
r = 0.7631

NAT. DISASTERS, W/ KATRINA, RESULT DETAILS & CALCULATION- DEATHS V. HEARINGS

X Values
$\sum = 220$
Mean = 12.222
$\sum(X - Mx)2 = SSx = 19727.111$

Y Values
$\sum = 3430$
Mean = 190.556
$\sum(Y - My)2 = SSy = 3022308.444$

X and Y Combined
N = 18
$\sum(X - Mx)(Y - My) = 235405.778$

R Calculation
$r = \sum((X - My)(Y - Mx)) / \sqrt{((SSx)(SSy))}$

$r = 235405.778 / \sqrt{((19727.111)(3022308.444))} = 0.9641$

Meta Numerics (cross-check)
r = 0.9641

NAT. DISASTERS, W/OUT KATRINA, RESULT DETAILS & CALCULATION- DEATHS V. HEARINGS

X Values
$\sum = 73$
Mean = 4.294
$\sum(X - Mx)2 = SSx = 493.529$

Y Values
$\sum = 1594$
Mean = 93.765
$\sum(Y - My)2 = SSy = 155557.059$

X and Y Combined
N = 17
$\sum(X - Mx)(Y - My) = 591.176$

R Calculation
$r = \sum((X - My)(Y - Mx)) / \sqrt{((SSx)(SSy))}$

$r = 591.176 / \sqrt{((493.529)(155557.059))} = 0.0675$

Meta Numerics (cross-check)
r = 0.0675

Table 9. Multivariate Analysis of Variance—25 Crises

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.993	150.550[b]	2.000	2.000	.007
	Wilks' Lambda	.007	150.550[b]	2.000	2.000	.007
	Hotelling's Trace	150.550	150.550[b]	2.000	2.000	.007
	Roy's Largest Root	150.550	150.550[b]	2.000	2.000	.007
Scope	Pillai's Trace	1.155	2.052	4.000	6.000	.206
	Wilks' Lambda	.004	14.408[b]	4.000	4.000	.012
	Hotelling's Trace	198.521	49.630	4.000	2.000	.020
	Roy's Largest Root	198.330	297.495[c]	2.000	3.000	.000
Intensity	Pillai's Trace	1.495	4.440	4.000	6.000	.052
	Wilks' Lambda	.057	3.174[b]	4.000	4.000	.145
	Hotelling's Trace	6.798	1.699	4.000	2.000	.403
	Roy's Largest Root	4.789	7.183[c]	2.000	3.000	.072
Timing	Pillai's Trace	1.101	1.836	4.000	6.000	.241
	Wilks' Lambda	.030	4.771[b]	4.000	4.000	.080
	Hotelling's Trace	27.955	6.989	4.000	2.000	.129
	Roy's Largest Root	27.798	41.697[c]	2.000	3.000	.006
Resource	Pillai's Trace	1.710	8.847	4.000	6.000	.011
	Wilks' Lambda	.020	6.030[b]	4.000	4.000	.054
	Hotelling's Trace	12.328	3.082	4.000	2.000	.260
	Roy's Largest Root	7.543	11.315[c]	2.000	3.000	.040
Cause	Pillai's Trace	.948	1.352	4.000	6.000	.352
	Wilks' Lambda	.085	2.431[b]	4.000	4.000	.205
	Hotelling's Trace	10.379	2.595	4.000	2.000	.297
	Roy's Largest Root	10.341	15.512[c]	2.000	3.000	.026
Fault	Pillai's Trace	.974	37.369[b]	2.000	2.000	.026
	Wilks' Lambda	.026	37.369[b]	2.000	2.000	.026
	Hotelling's Trace	37.369	37.369[b]	2.000	2.000	.026
	Roy's Largest Root	37.369	37.369[b]	2.000	2.000	.026

Table 10. MANOVA—Total Crisis Value to Total Hearings, Acceleration, Average; 25 Crises

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.952	19.724[b]	3.000	3.000	.018
	Wilks' Lambda	.048	19.724[b]	3.000	3.000	.018
	Hotelling's Trace	19.724	19.724[b]	3.000	3.000	.018
	Roy's Largest Root	19.724	19.724[b]	3.000	3.000	.018
T	Pillai's Trace	2.549	1.569	54.000	15.000	.169
	Wilks' Lambda	.000	4.042	54.000	9.755	.011
	Hotelling's Trace	598.014	18.457	54.000	5.000	.002
	Roy's Largest Root	590.916	164.143[c]	18.000	5.000	.000

Table 11. MANOVA—Total Crisis Value to Total Hearings, Acceleration, Average; Black Swans

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	1.000	7439.320[b]	1.000	1.000	.007
	Wilks' Lambda	.000	7439.320[b]	1.000	1.000	.007
	Hotelling's Trace	7439.320	7439.320[b]	1.000	1.000	.007
	Roy's Largest Root	7439.320	7439.320[b]	1.000	1.000	.007
T	Pillai's Trace	1.000	978.888[b]	3.000	1.000	.023
	Wilks' Lambda	.000	978.888[b]	3.000	1.000	.023
	Hotelling's Trace	2936.664	978.888[b]	3.000	1.000	.023
	Roy's Largest Root	2936.664	978.888[b]	3.000	1.000	.023

Table 12. MANOVA—Average, Total, and Acceleration; Wicked Problems

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.984	59.798[b]	1.000	1.000	.082
	Wilks' Lambda	.016	59.798[b]	1.000	1.000	.082
	Hotelling's Trace	59.798	59.798[b]	1.000	1.000	.082
	Roy's Largest Root	59.798	59.798[b]	1.000	1.000	.082
T	Pillai's Trace	.995	16.983[b]	11.000	1.000	.187
	Wilks' Lambda	.005	16.983[b]	11.000	1.000	.187
	Hotelling's Trace	186.810	16.983[b]	11.000	1.000	.187
	Roy's Largest Root	186.810	16.983[b]	11.000	1.000	.187

Table 13. MANOVA—Total Crisis Value to Total Hearings, Acceleration, Average; Social and Domestic Problems

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.485	.942[b]	1.000	1.000	.510
	Wilks' Lambda	.515	.942[b]	1.000	1.000	.510
	Hotelling's Trace	.942	.942[b]	1.000	1.000	.510
	Roy's Largest Root	.942	.942[b]	1.000	1.000	.510
T	Pillai's Trace	.457	.168[b]	5.000	1.000	.941
	Wilks' Lambda	.543	.168[b]	5.000	1.000	.941
	Hotelling's Trace	.840	.168[b]	5.000	1.000	.941
	Roy's Largest Root	.840	.168[b]	5.000	1.000	.941

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